Greater Boston Regional Planning Session II

Wednesday, June 28

Objectives

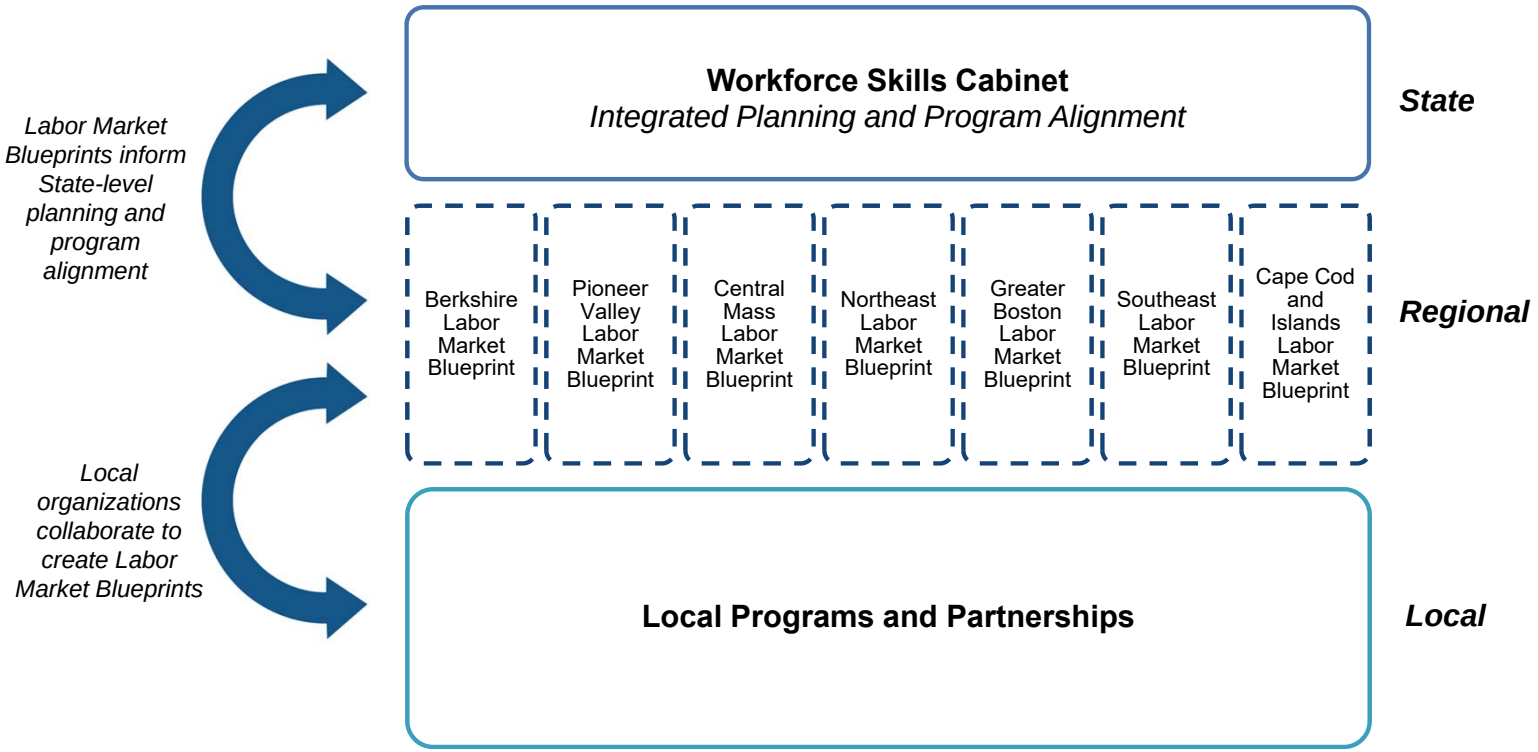
- Confirm **regional criteria** to select high priority industries and occupations
- Confirm regional **high priority industries and occupations**
- Review top demographic, labor pool, and talent pipeline considerations impacting workforce skills gaps

Agenda

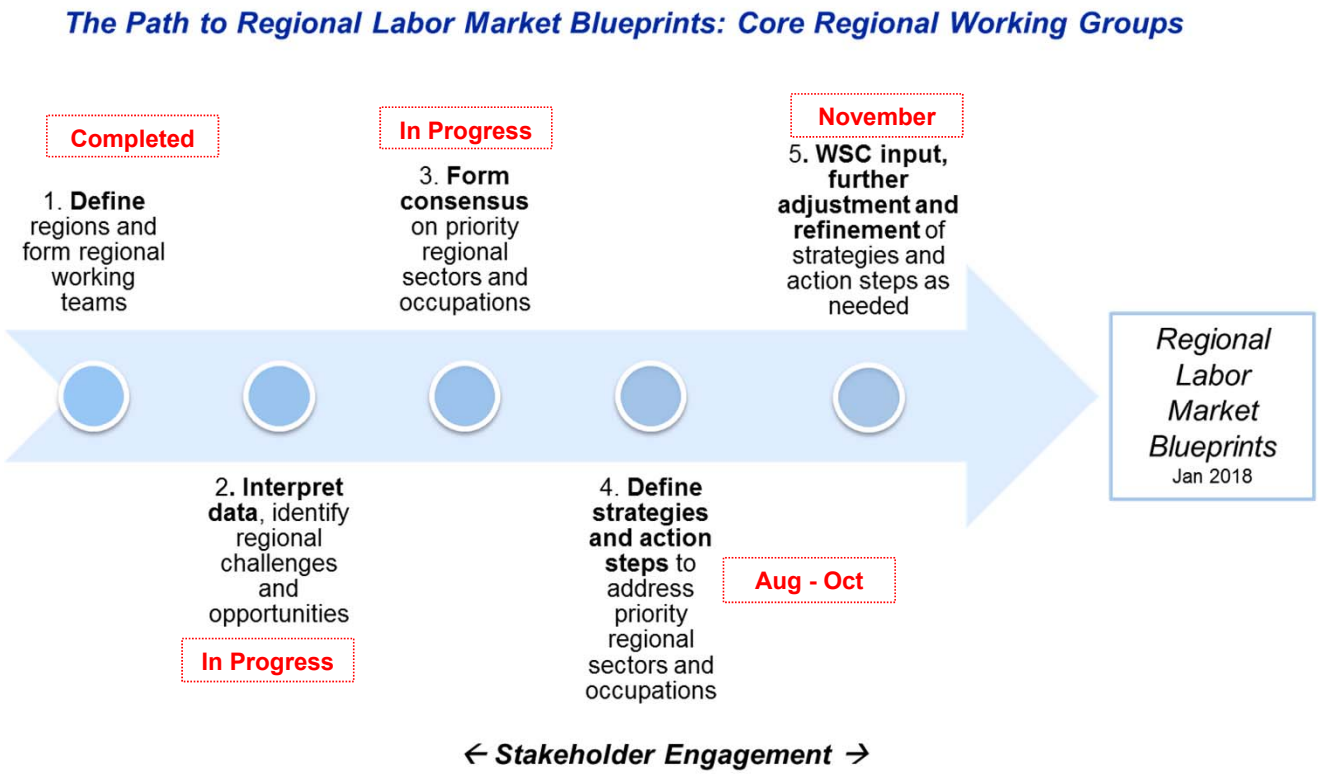
- Regional Planning Context
  - Regional planning timeline
  - Blueprint structure
- Regional Demographic Context
  - State and Regional Demographics on the Workforce
- Framing the Data Process to Identify Priority Industries/Occupations
  - Region's Preliminary Criteria
  - Confirming Industry Priorities
  - Review Occupational Gap Priorities
  - Data Tool

I. Regional Planning Context

Why is this important?



Regional Planning Timeline

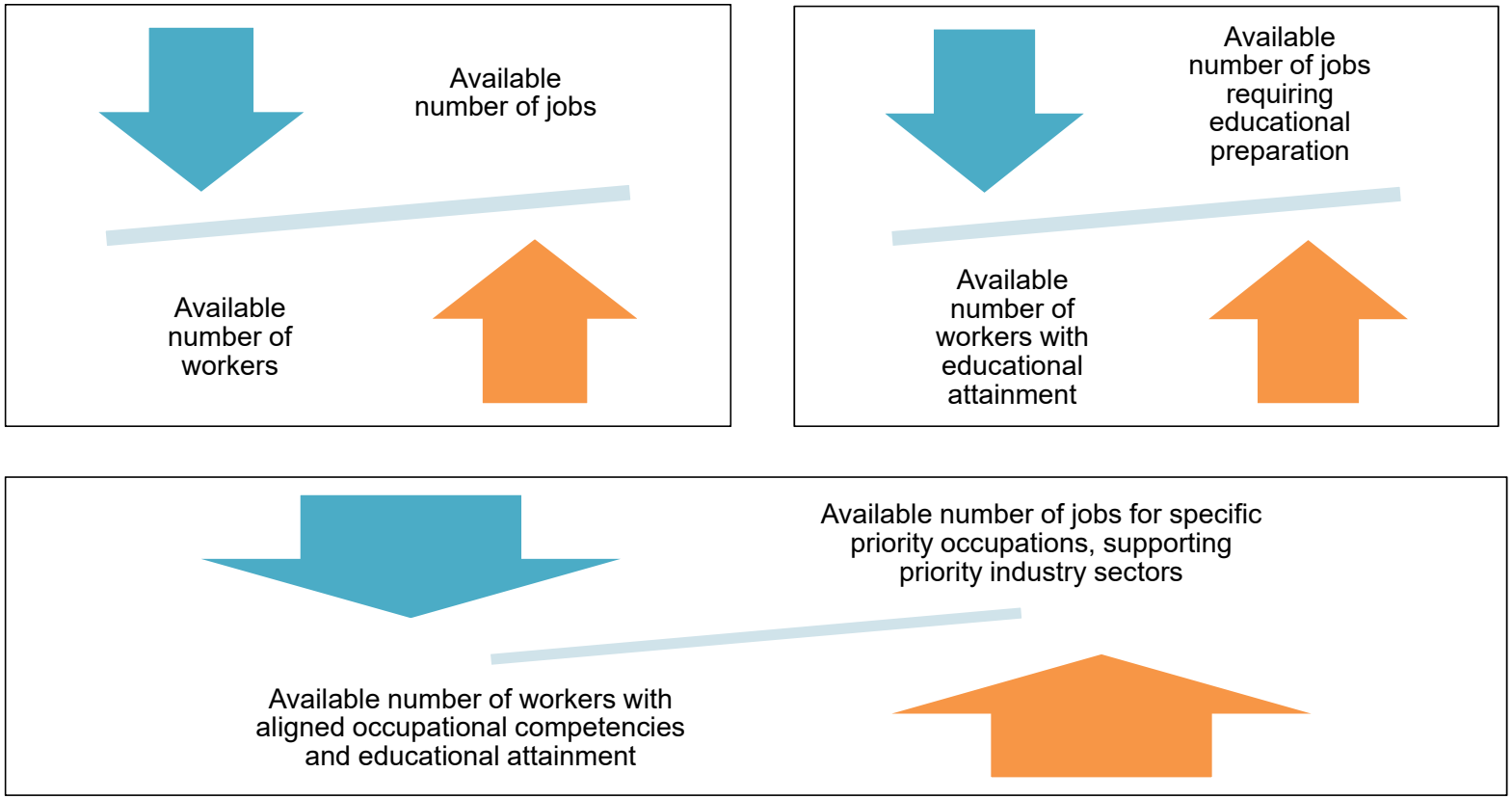


Blueprint Review – Identify Strategies for Skill Gaps

Introduction	Describe the process of creating a regional plan.
Where are we now?	Describe the current state of your region, including an analysis of industries, occupations, demographic shifts, and gaps between employer demand and employee supply. I. Industry Demand Analysis II. Occupational Demand Analysis ← Session I III. Regional Context: Demographic and Industry Trends IV. Workforce Supply ← Session II
Where do we want to go?	Describe the collectively developed criteria, industry and occupational priorities, vision, mission, and goals for your region. I. Criteria for Priority Industries and Occupations II. High Priority Industries ← Sessions I-II III. High Priority Occupations IV. Assets V. Vision, Mission, Goals ← Sessions III-IV
How do we get there?	Describe the strategies you will jointly employ to align the work of multiple systems around your shared vision, mission, and goals. I. Shared Strategies II. Mutually Reinforcing Activities ← Sessions III-IV

Framing the conversation: What is a skills gap?

Changes in *demand* (jobs) or *supply* (people) can impact the skills gap.



I. Regional Demographic Context

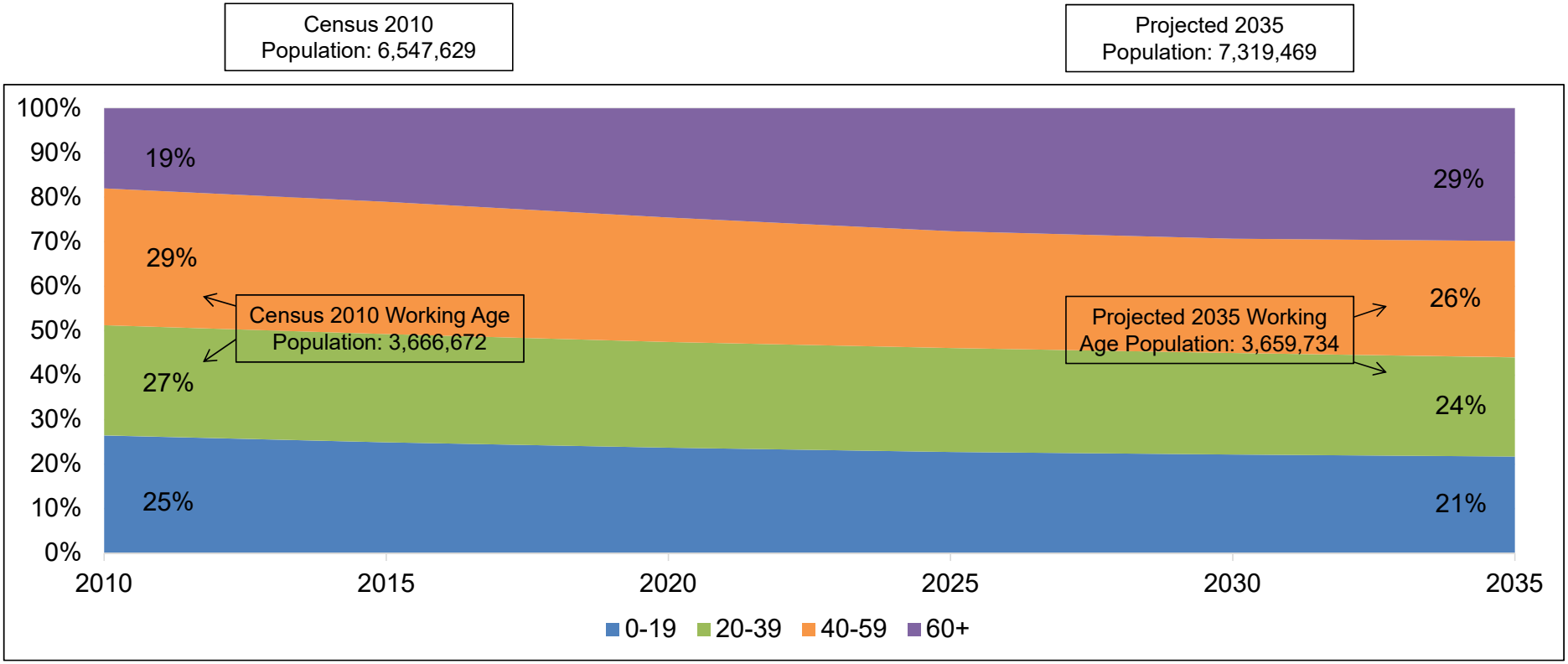
Observations

- **As our State's population ages, the share and number of working-age people is declining.**
  - In 2010, 56% of the population was age 20-59.
  - In 2035, this share will decrease to 50%.
  - The total population of Greater Boston (2011-2015 average) is estimated to be 2,369,596.
- **The racial, ethnic, and national origins of the region's residents are increasingly diverse.**
  - Today, 27% of the region is racially non-white (10% African American, 9% Asian, 8% other).
  - 11% is ethnically Hispanic.
  - 23% of the region is foreign-born.
- **Greater Boston attracts more workers than it loses.**
  - 41% of the region's employees commute from an outside location.
  - Almost 20% of employed individuals in Boston's labor pool commute out of Greater Boston for work.

Sources: Umass Donohue Institute, American Community Survey 2011-2015, U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014).

Projected State Population Growth by Age, 2010-2035

The share of older residents is increasing, while the share and number of the working age population is declining.



UMass Donahue Institute, Long-term Population Projections for Massachusetts Regions and Municipalities, March 2015

State Trends, Race/Ethnicity and Place of Origin

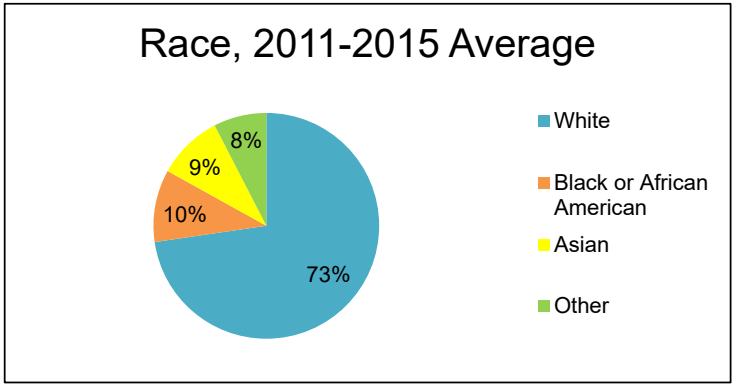
Massachusetts population growth is driven by immigration and growth in diverse populations.

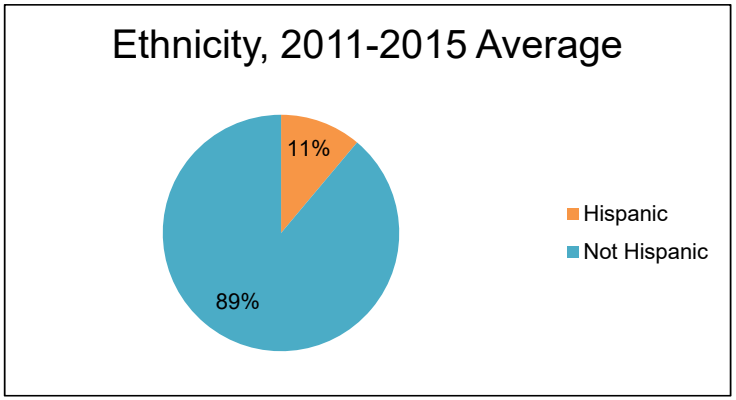
Massachusetts	2000	2012-2014	Share of Total Population 2012-2014	***Absolute Change***	Percent Change	Average Annual Growth Rate
Total Population*	6,131,752	6,447,295	100%	***315,543***	5.1%	0.4%
Nativity						
Native Born	5,279,860	5,326,213	83%	***46,353***	0.9%	0.1%
Foreign Born**	851,892	1,121,082	17%	***269,190***	31.6%	2.1%
Race/Ethnicity						
White, non-Hispanic	5,026,398	4,817,401	75%	***-208,997***	-4.2%	-0.3%
Black, non-Hispanic	300,758	407,723	6%	***106,965***	35.6%	2.4%
Asian, non-Hispanic	224,242	375,130	6%	***150,888***	67.3%	4.0%
Hispanic	412,496	678,193	11%	***265,697***	64.4%	3.9%
Other race, non-Hispanic	167,858	168,848	3%	***990***	0.6%	0.0%
*Civilian non-institutional population						
**Foreign born is defined here as those born outside of the 50 states and the District of Columbia, who was not born to American parents abroad, and people born in Puerto Rico and other U.S. territories.						

Source: Commonwealth Corporation via 2000 Census, 2012-2014 American Community Survey, PUMS.

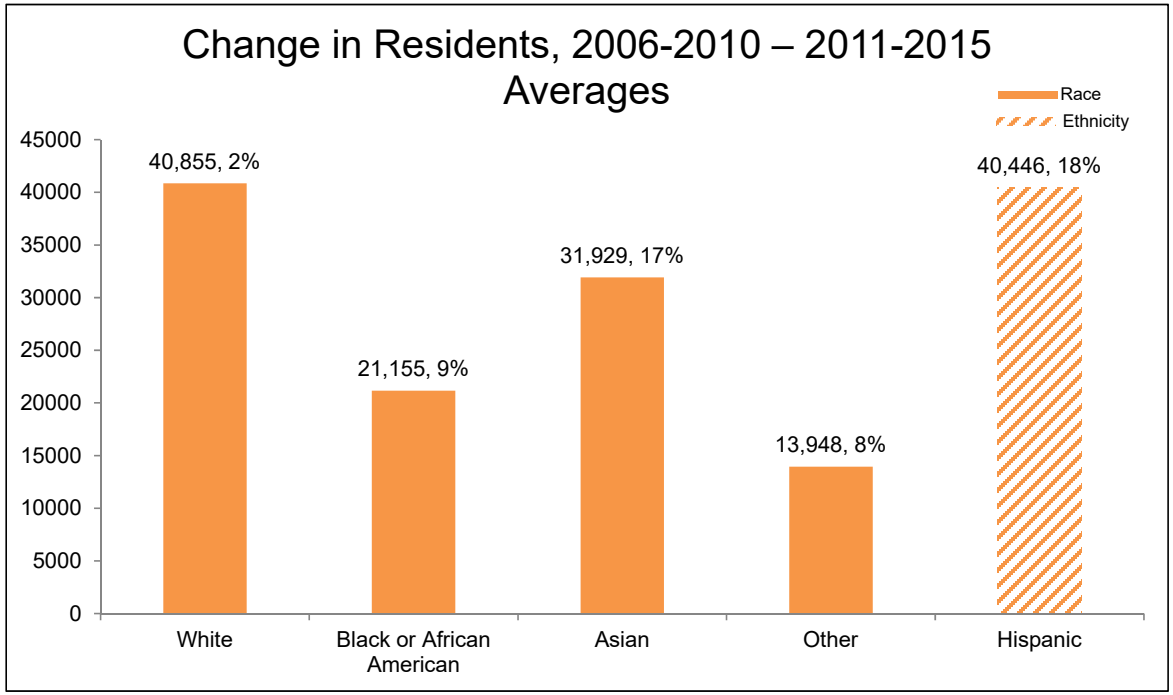
Regional Trends, Race/Ethnicity

Population growth in Greater Boston is driven by non-white residents; increases in the Hispanic and Asian population are most notable.





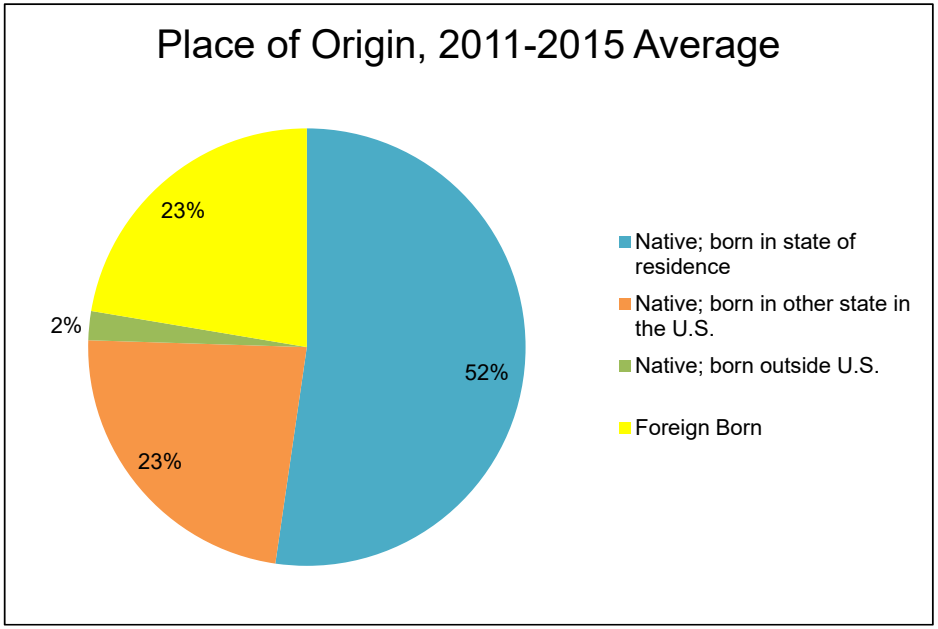
Total Population Estimate, All Ages: 2,369,596
2011-2015 Average

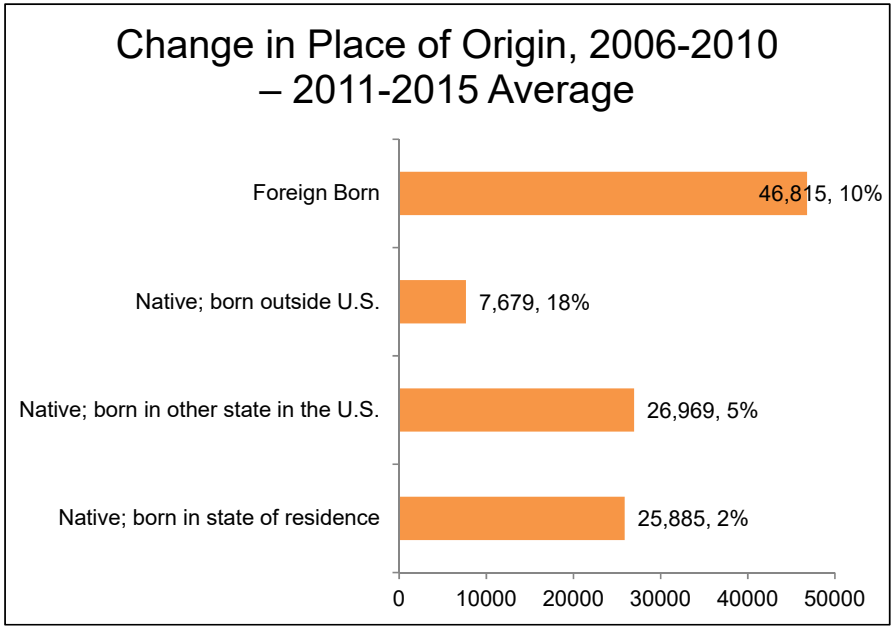


Source: American Community Survey, Selected Characteristics of the Total and Native Populations of the United States, 5 Year Averages 2011-2015

Regional Trends, Place of Origin

The foreign-born population demonstrates the most dramatic increase in the Greater Boston area.



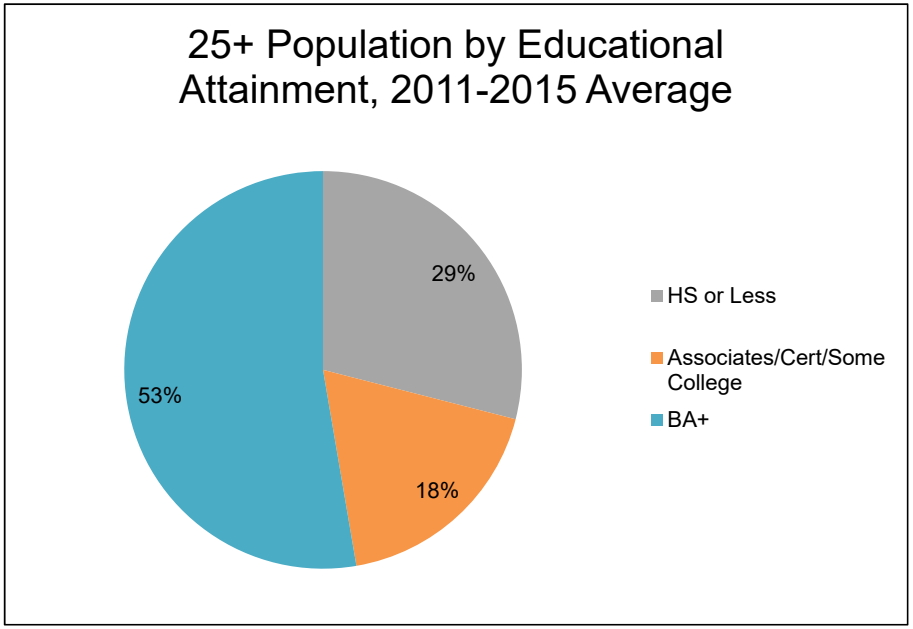


Total Population Estimate, All Ages: 2,369,596

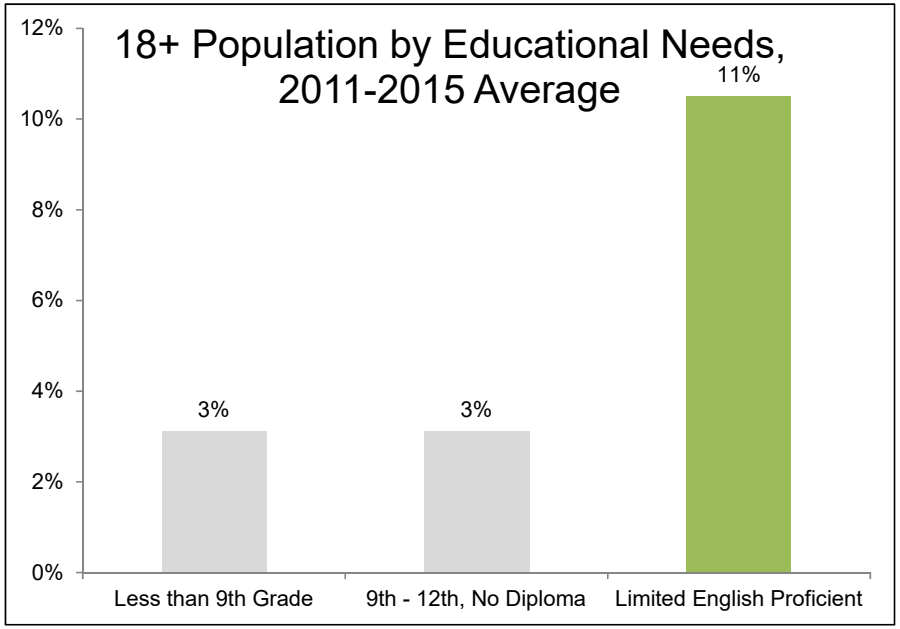
Source: American Community Survey, Selected Characteristics of the Total and Native Populations of the United States, 5 Year Averages 2011-2015

Regional Trends, Education

Although much of Greater Boston is highly educated, a portion of residents require additional remediation or language support.



Total Population Estimate, 25+: 1,629,236

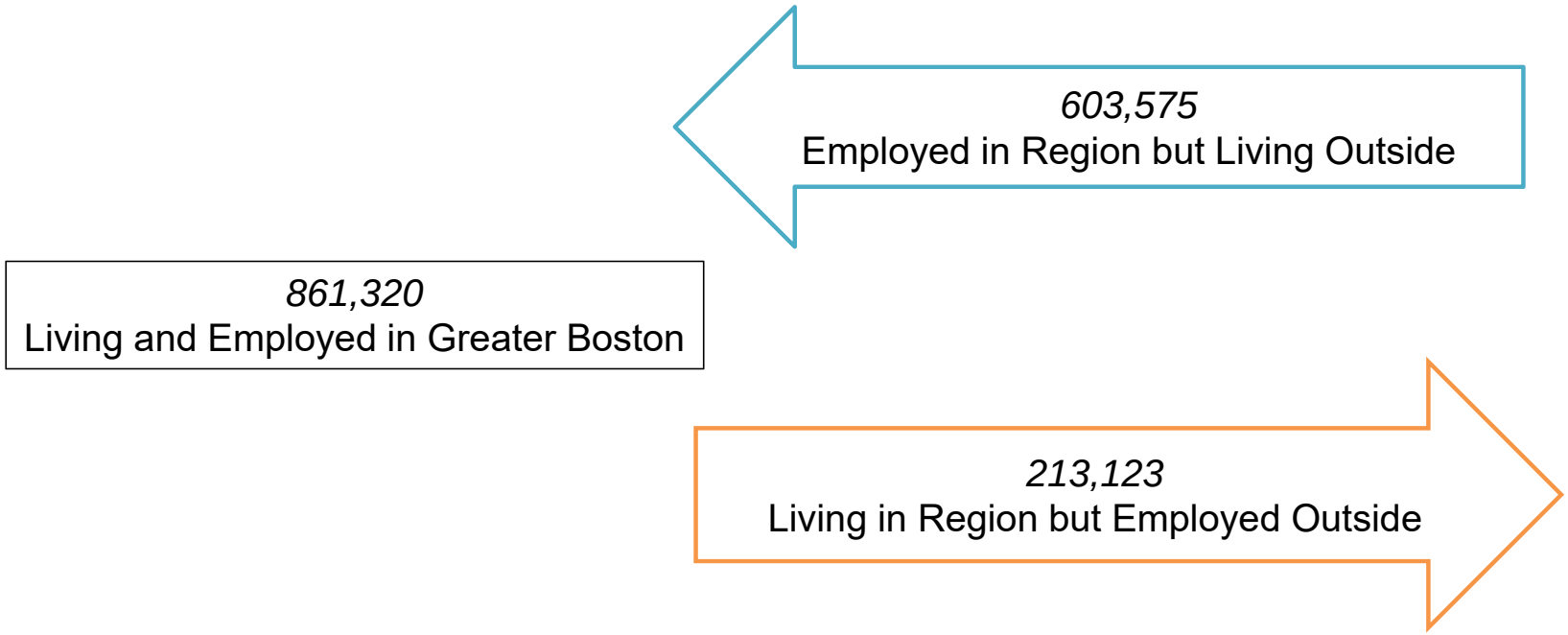


Total Population Estimate, 18+: 1,362,887

Source: American Community Survey 5 Year Averages 2011-2015

Regional Commuter Patterns

Greater Boston sends approximately 200,000 residents outside the region to work, and attracts approximately 600,000 residents from outside its borders, resulting in a net increase of workers in the Greater Boston area.



U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014).

II. Framing the Data Process to Identify Priority Industries/Occupations

Preliminary Criteria

- Supply Gap
  - Occupations needed to successfully meet workforce demand
- High Growth, High Wage Occupations (4 and 5 Stars)
  - Higher wages
  - Higher demand
- Supportive Employers
  - Opportunities for people with barriers (i.e. people with disabilities)
- Career Pathways
  - Availability of career pathways (either based on education or experience)
  - Entry points and ladders
  - Translatable skills
- Support Industry Resilience
  - Strong industries we want to thrive
  - Industries at risk because of workforce crisis
  - Translatable skills

Preliminary Priorities

Industries

- Accommodation and Food Services
- Construction
- Retail Trade
- Healthcare and Social Services
- Manufacturing
  - Scientific Research and Development Services
  - Advanced (general)
- Professional and Technical Services
  - Research and Development in Biotechnology
  - Computer Programming Services, Computer Systems Designs Services, Computer Facilities Management Services, Other Computer Related Services

Occupations

- Registered Nurse
- Web Developer
- Software Occupations
- IT Occupations
- Accounting Occupations
- Management Occupations

Regional Industry Priorities– Establishments, Employment, Wages

	ESTABLISHMENTS			EMPLOYMENT			WAGES		
	Count	Share	Change	Count	Share	Change	Total Wages	Avg Weekly Wages	Change
Accommodation and Food Services	6,454	7.3%	▲ 5.4%	135,839	8.3%	▲ 9.4%	$957,913,654	$542	▲ 16.70%
Construction	5,850	6.6%	▲ 8.1%	59,720	3.7%	▲ 16.3%	$1,225,732,542	$1,579	▲ 11.49%
Finance and Insurance	4,615	5.2%	▲ 3.5%	105,350	6.5%	▲ 5.3%	$3,939,537,759	$2,877	▲ 24.97%
Health Care and Social Assistance	14,619	16.6%	▲ 24.4%	274,249	16.8%	▲ 9.3%	$4,483,374,087	$1,258	▲ 6.53%
Manufacturing	2,056	2.3%	▼ -2.6%	79,147	4.8%	▼ -5.0%	$2,438,293,552	$2,370	▲ 32.72%
Professional and Technical Services	15,144	17.2%	▲ 7.9%	217,629	13.3%	▲ 11.6%	$6,896,059,908	$2,437	▲ 13.78%
Retail Trade	8,183	9.3%	▲ 0.6%	128,332	7.9%	▲ 4.9%	$1,153,924,865	$692	▲ 18.64%

Source: Department of Unemployment Assistance/Bureau of Labor Statistics Quarterly Census of Employment and Wages, Q3 2013 - 2016

III. Confirming Supply Gaps and Occupational Priorities

How do we calculate a supply gap ratio?

Supply Gap Ratio = Projected Qualified Individuals Per Opening

- Supply Gap Ratio is a ***proxy measure*** for understanding what occupations are likely to not have enough talent to meet employer demand.
- Supply / Demand = Supply Gap Ratio
  - 100 qualified individuals / 50 potential openings = supply gap ratio of 2
    - 2 qualified individuals per opening (More supply than demand)
  - 6 qualified individuals / 12 potential openings = supply gap ratio of 0.5
    - 0.5 qualified individuals per opening (Less supply than demand)

How do we calculate demand and supply?

Demand

How many potential job openings do we expect for a given occupation?

Average of total number of jobs for each occupation across three data sets…

- 2017 projections from openings and replacement (OES)
- 2024 projections from openings and replacement (OES)
- Help Wanted Online annualized 2016 job postings

Supply

How many qualified individuals do we potentially have available to fill a relevant job opening?

Sum of available workers or graduates related to an occupation from multiple data sets…

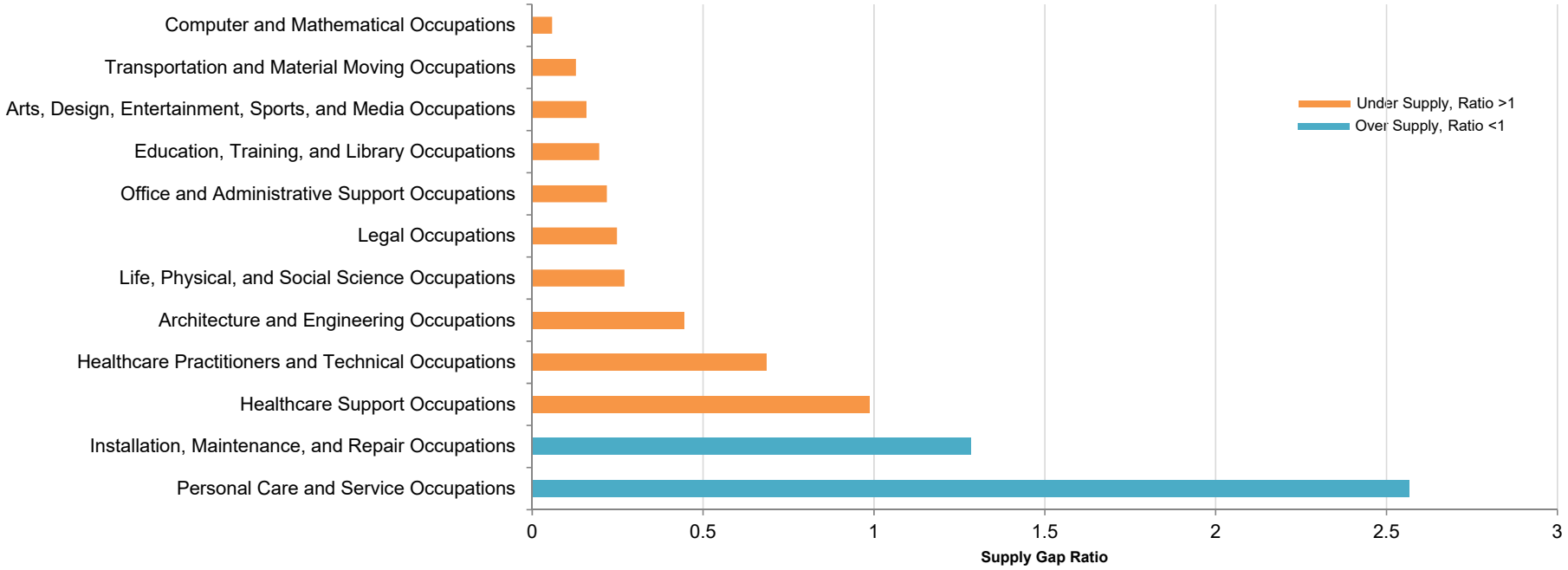
- Unique UI claims, 2016 (DUA)
- Relevant completer data
  - Voc-Tech completers, 2013-2015 average (DESE), 50% available*
  - Community College completers, 2013-2015 average (DHE), 90% available
  - State University completers, 2013-2015 average (DHE), 71% available
  - Private University completers, 2013-2015 average (iPEDS), 55% available

*All retention figures are statewide, studies cited in Data Tool

**Occupations requiring post-secondary education only

Regional Supply Gap Overview: Sub-BA Clusters

Computer and Mathematical occupations face the largest supply gap.

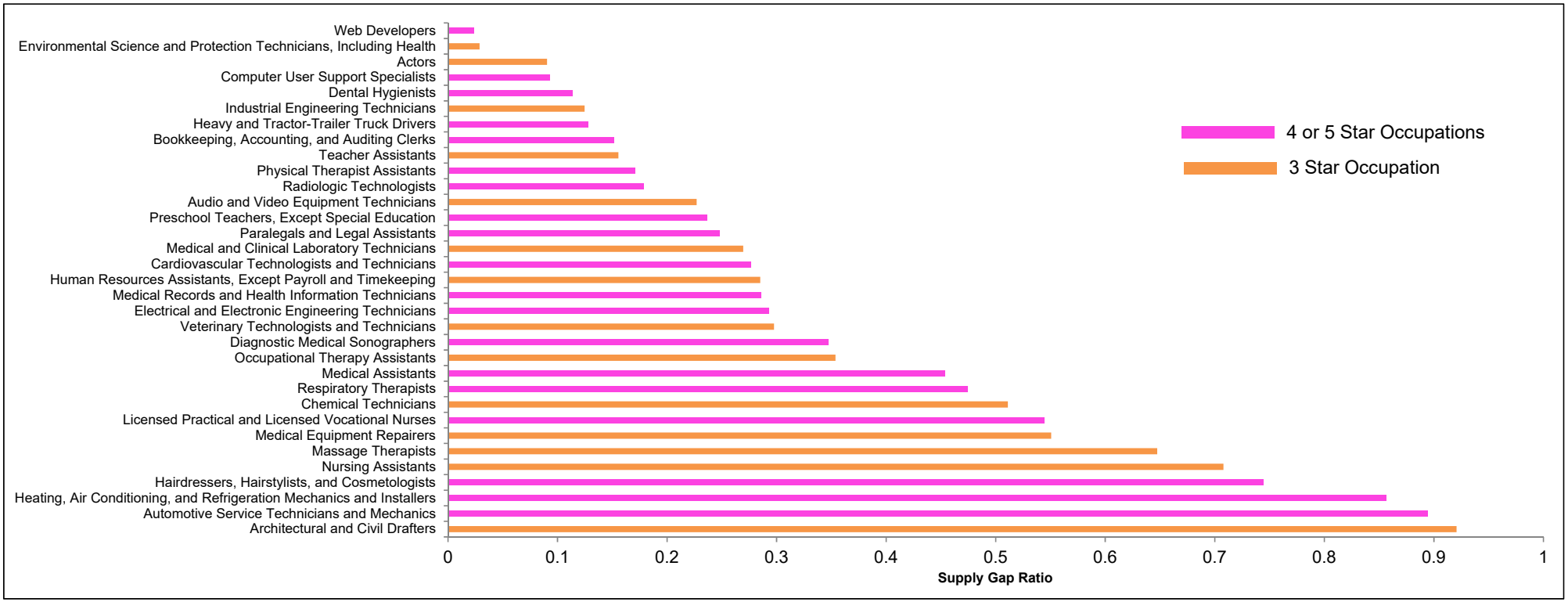


Occupations requiring a postsecondary non-degree award, some college, or an Associate's Degree, 100+ Demand Index only

Source: OES Projections 2014-2024, OES Projections 2015-2017, HWOL 2016 average, iPEDS, Massachusetts Department of Higher Education, Department of Unemployment Assistance

More Openings than Qualified: Regional Sub-BA Occupations

Among all occupations requiring an Associates or Certificate, a number of four and five star occupations in STEM fields do not have enough regional supply to meet employer demand.

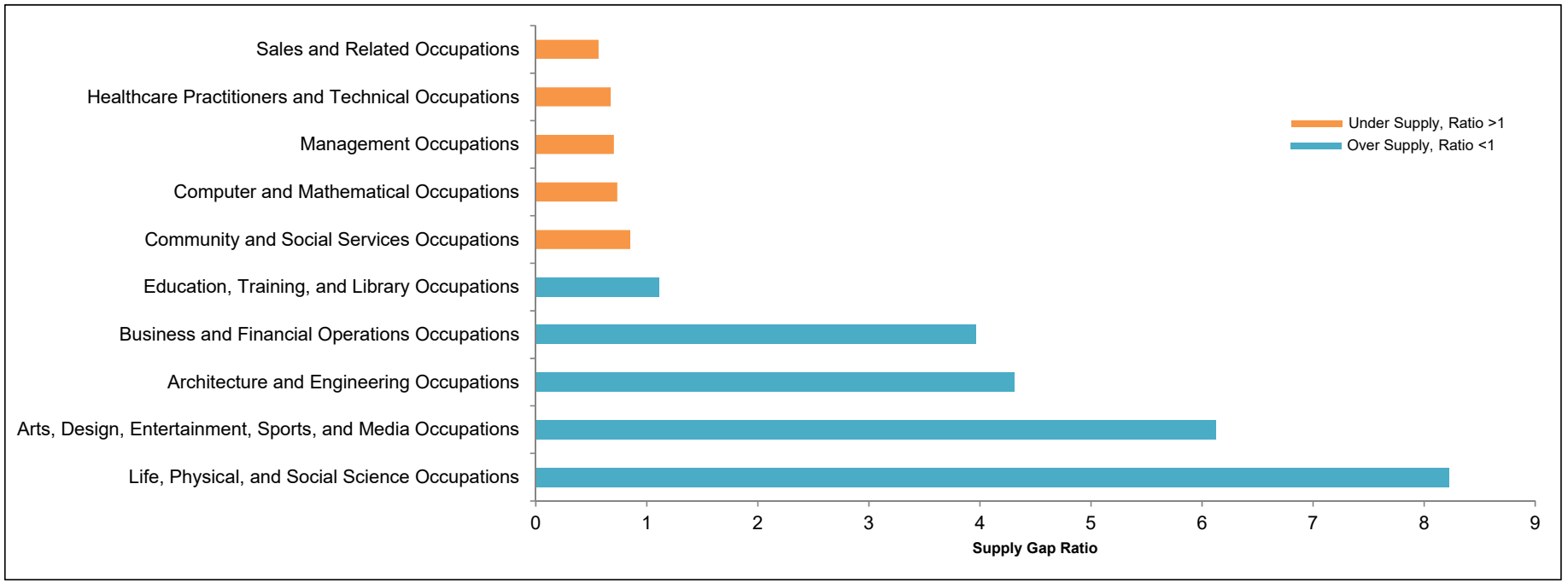


Occupations requiring a postsecondary non-degree award, some college, or an Associate's Degree, 100+ Demand Index Only

Source: OES Projections 2014-2024, OES Projections 2015-2017, HWOL 2016 average, iPEDS, Massachusetts Department of Higher Education, Department of Unemployment Assistance

State Supply Gap Overview: BA Clusters

Sales, Healthcare, Management, and Computer and Mathematical Occupations average the lowest ratios of qualified individuals per opening at the BA level.

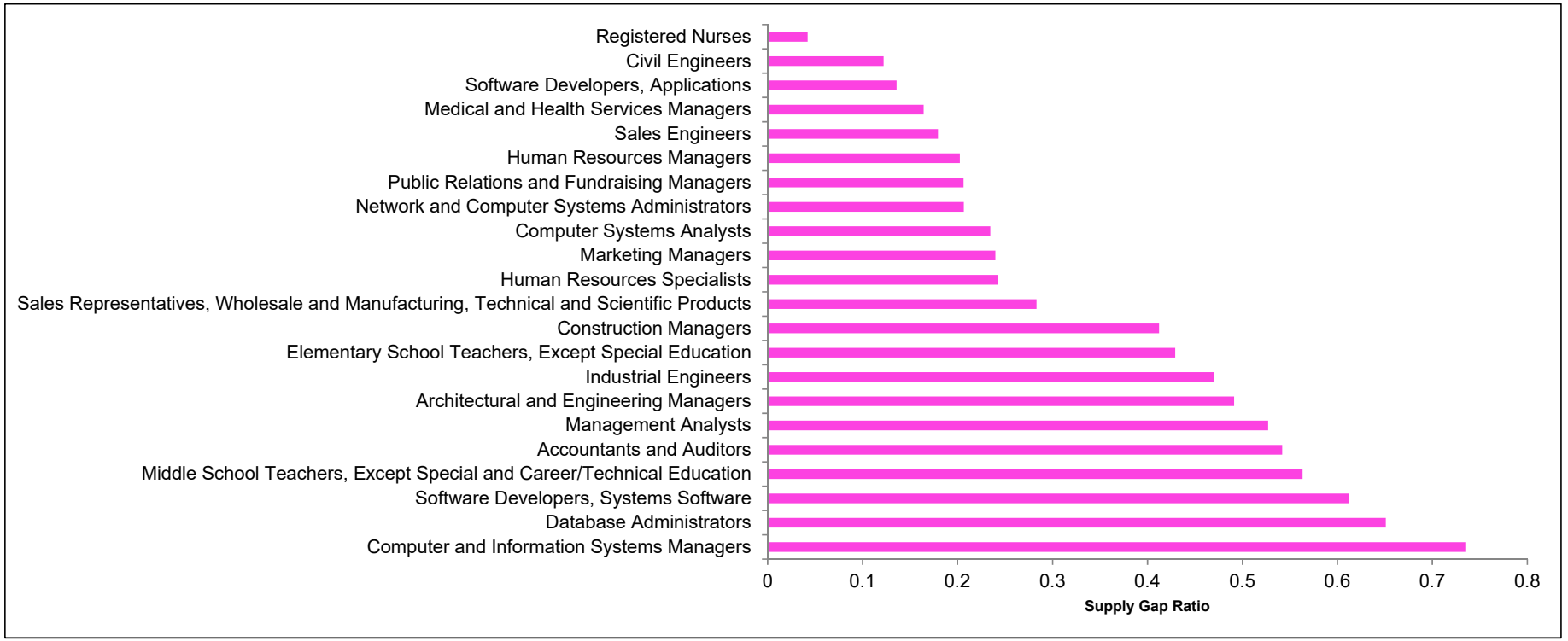


Occupations requiring a Bachelor's Degree, Demand Index 100+ Only

Source: OES Projections 2014-2024, OES Projections 2015-2017, HWOL 2016 average, iPEDS, Massachusetts Department of Higher Education, Department of Unemployment Assistance

More Openings than Qualified: State BA Occupations

A number of 4 and 5 star occupations, largely in STEM fields, are in short supply.



Occupations requiring a Bachelor's Degree, 4 and 5 stars, Demand Index 100+ only

Source: OES Projections 2014-2024, OES Projections 2015-2017, HWOL 2016 average, iPEDS, Massachusetts Department of Higher Education, Department of Unemployment Assistance

Takeaways

Associate's, Some college, Post-secondary Certificate

- In Greater Boston, can expect a wide variety of supply gaps in 4 and 5 star occupations, including healthcare support and IT/computer/engineering professions.

Bachelor's Degree

- Across the State, we expect supply gaps in 4 and 5 star occupations primarily in STEM fields, with an emphasis on Healthcare and Computer and Mathematical occupations.

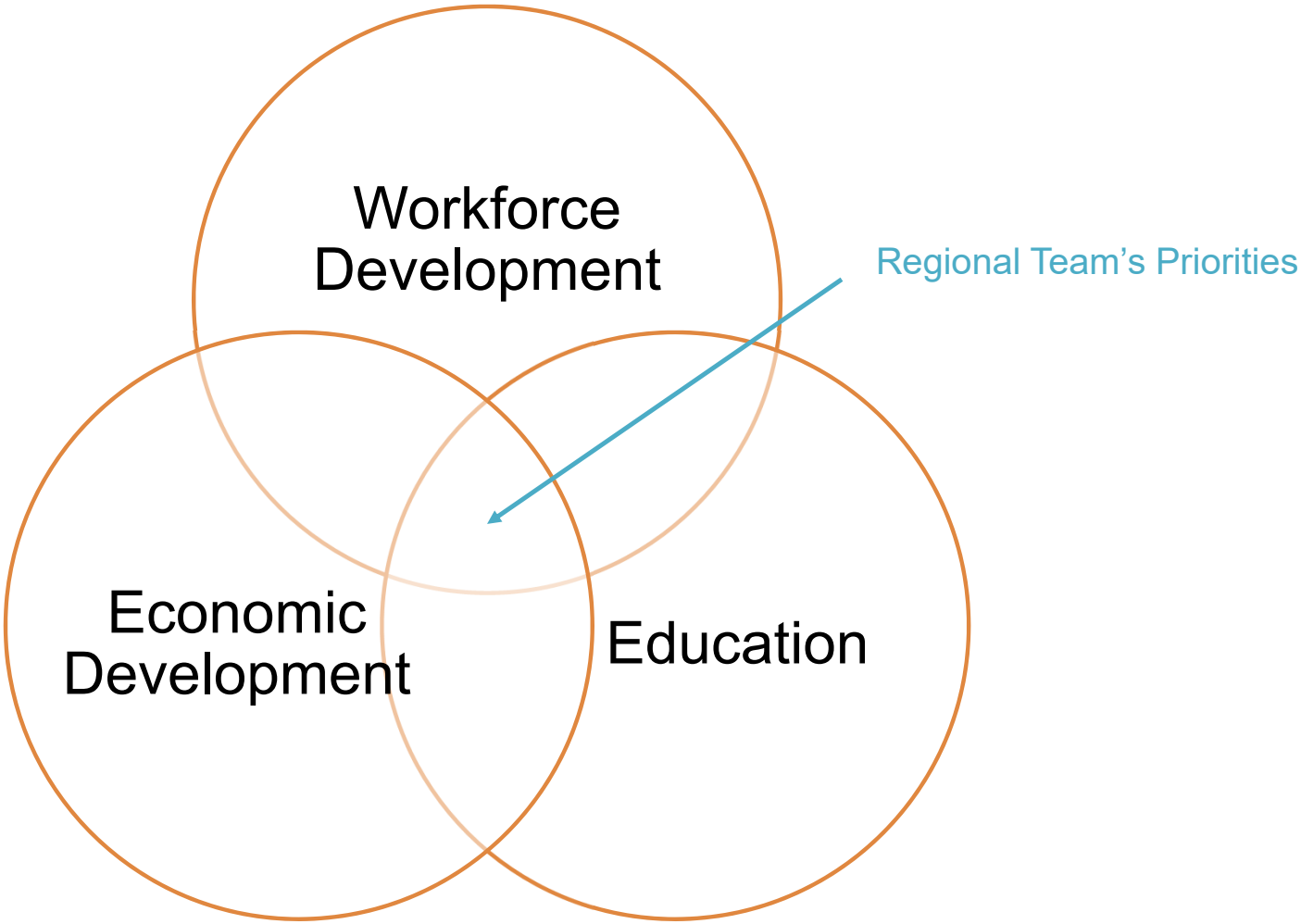
Regional Industry/Occupation Priorities, Sub-BA

Industry Priorities	Supply Gap, 4-5 Star, Associates/Cert/Some College	Supply Gap, 1-3 Star, Associates/Cert/Some College	High Indexed Demand	4 and 5 Star Occupations, HS or Below	Career Pathway Entryway	Supportive Employer/Other
1. Accommodation and Food Services			First Line Supervisors of Food Preparation and Serving Workers		Hotel, Motel, and Resort Desk Clerks	
2. Construction	Architectural and Civil Drafters			FirstLine Supervisors of Construction Trades and Extraction Workers Carpenters Construction Laborers	Carpenter Helper	
3. Retail Trade			Retail Salespersons First Line Supervisors of Retail Sales Workers			
4. Healthcare and Social Services	Dental Hygienists Physical Therapist Asst Radiologic Technologists Medical Records Techs Diagnostic Medical Sonographers Medical Assistants	Occupational Therapy Asst Medical and Clinical Laboratory Techs *Nursing Assistants*			*Nursing Assistants*	
5. Manufacturing	Industrial Engineering Techs					
6. Professional and Technical Services (IT and Biotech)	Web Developers Computer User Support Specialists	Chemical Technicians				Accounting and Management Occupations

Regional Industry/Occupation Priorities, BA+

Industry Priorities						
1. Accommodation and Food Services						
2. Construction						
3. Retail Trade						
4. Healthcare and Social Services						
5. Manufacturing						
6. Professional and Technical Services (IT and Biotech)						

Reminder


Workforce Development
Regional Team's Priorities
Economic Development
Education

Data Tool

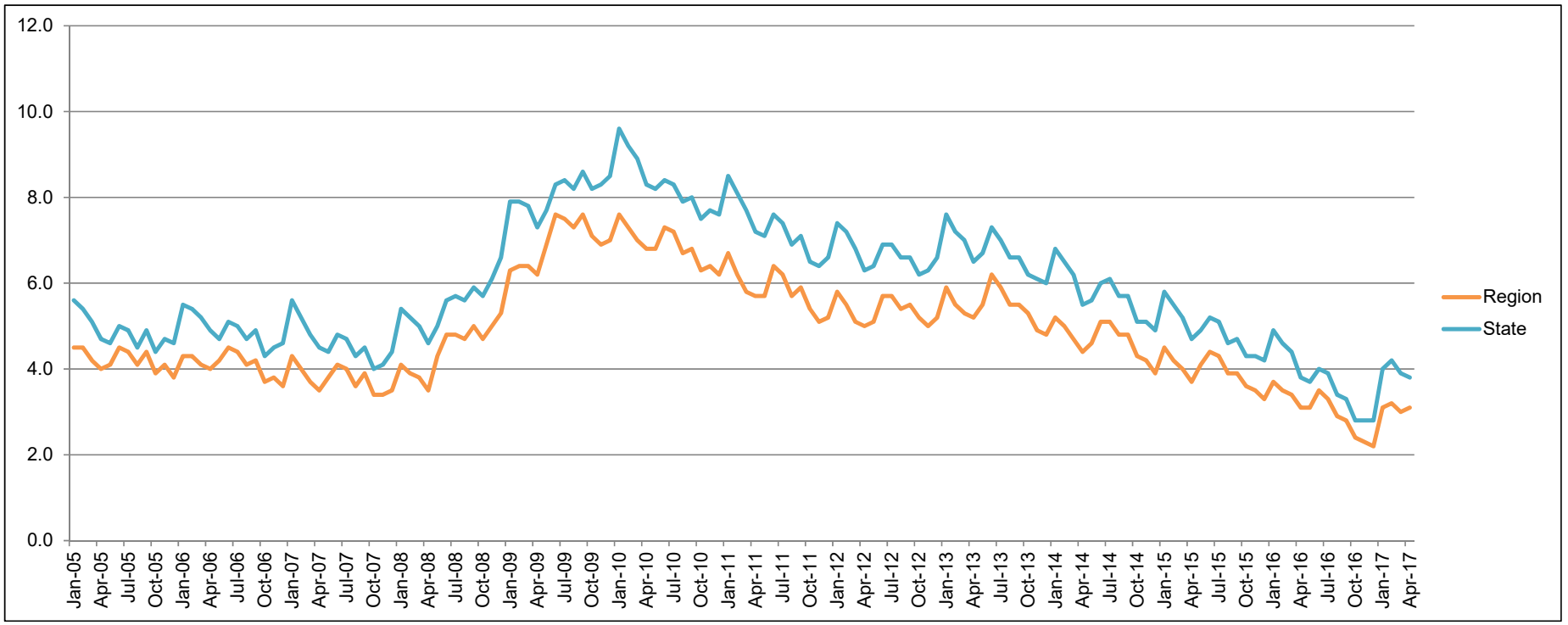
- Demo

Appendix

I. Labor Force and Unemployment Demographics

State and Regional Unemployment Rate

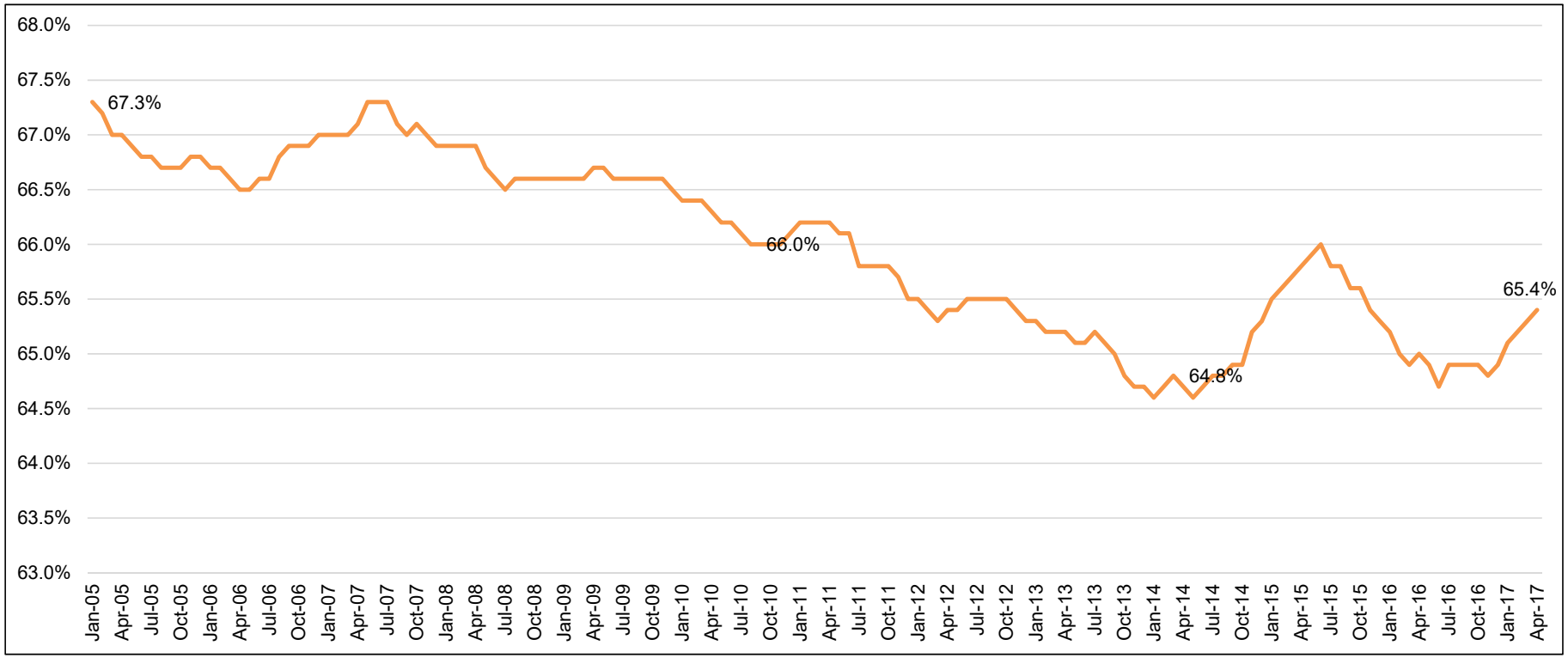
Greater Boston's unemployment rates trend about a .5-1 percentage point below those of the State.



Source: Bureau of Labor Statistics, 2005-2017 Seasonally Unadjusted Data

State Labor Force Participation Rate

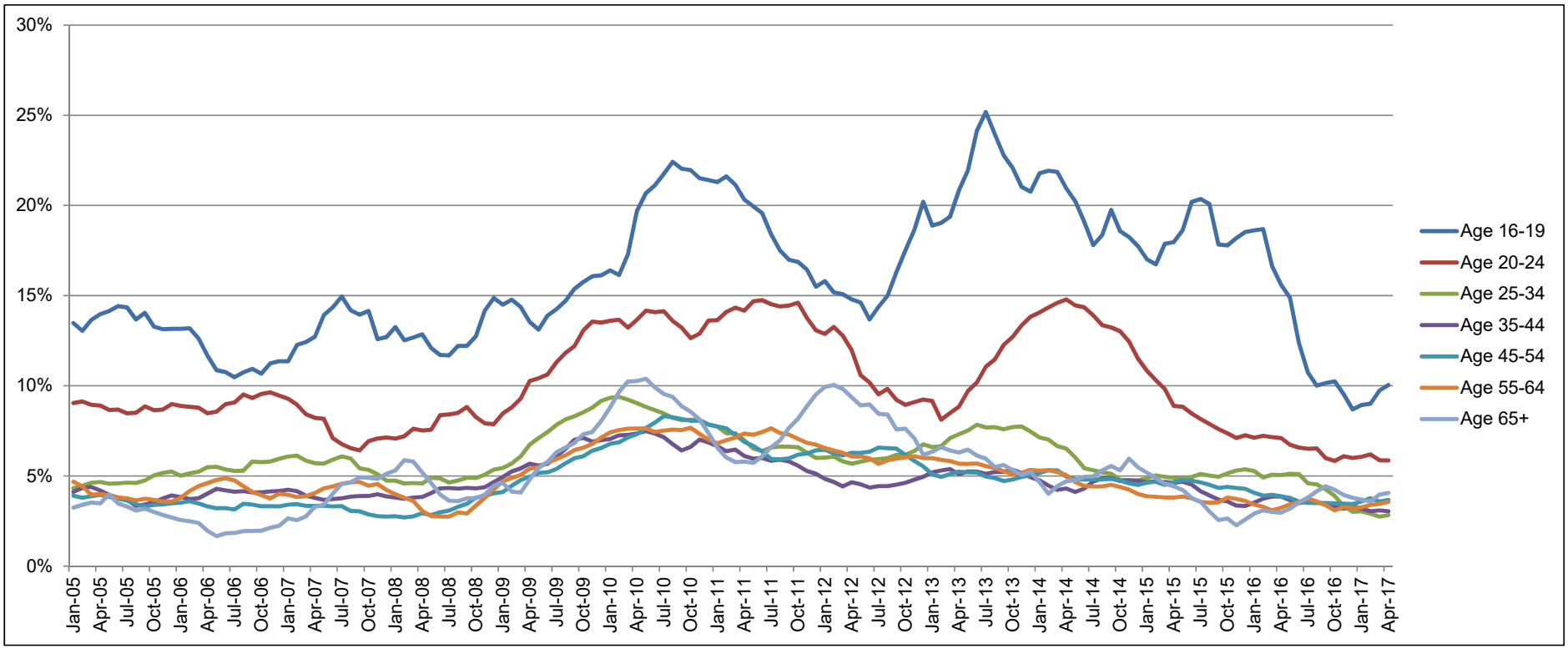
The labor force participation rate has not recovered to pre-recession levels.



Source: Bureau of Labor Statistics, 2005-2017 Seasonally Unadjusted Data

State Unemployment Rate by Age, 20-64

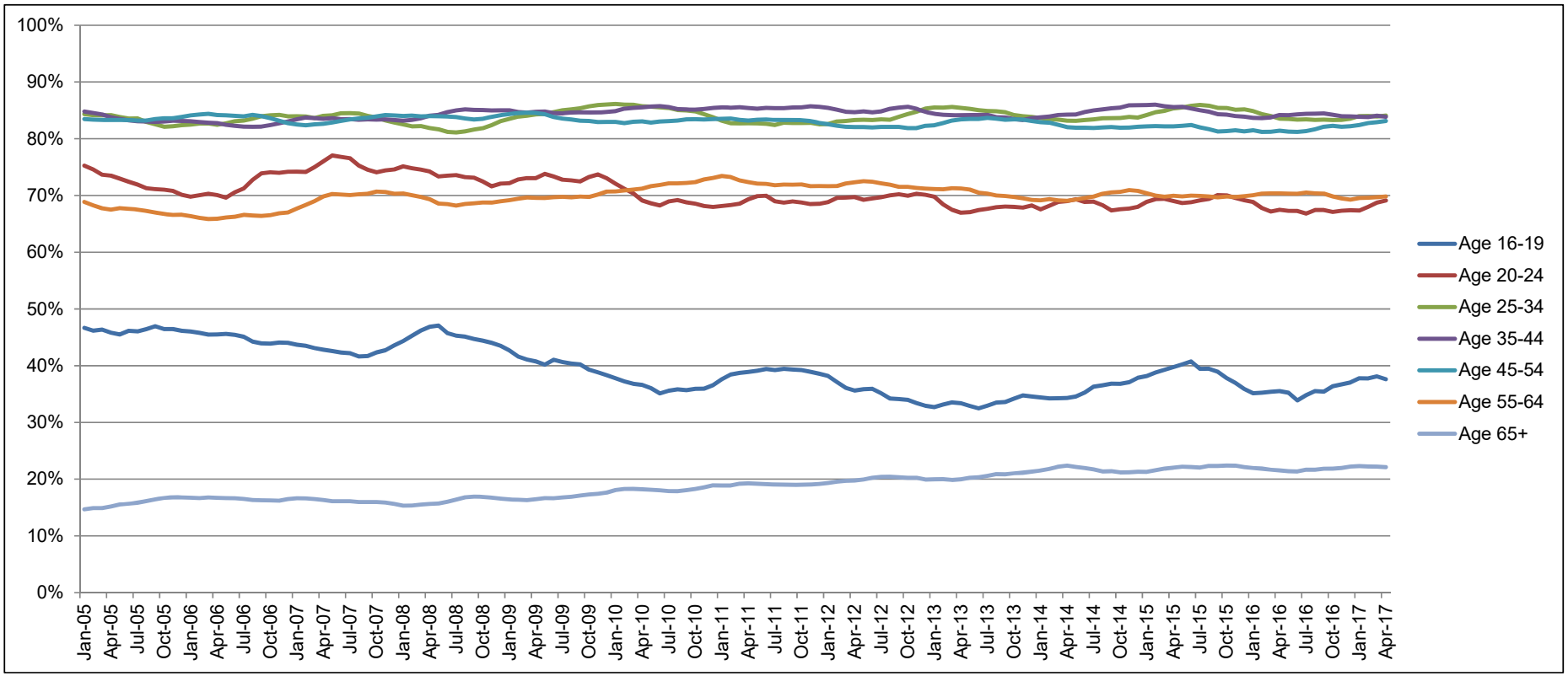
Cohorts age 16-19, 20-24, and 65+ have demonstrated the most sensitivity to changing labor market conditions. The highest unemployment rates are among young adults 16-19 and 20-24.



Source: BLS Current Population Survey, 12 Month Moving Averages

State Labor Force Participation by Age, 16+

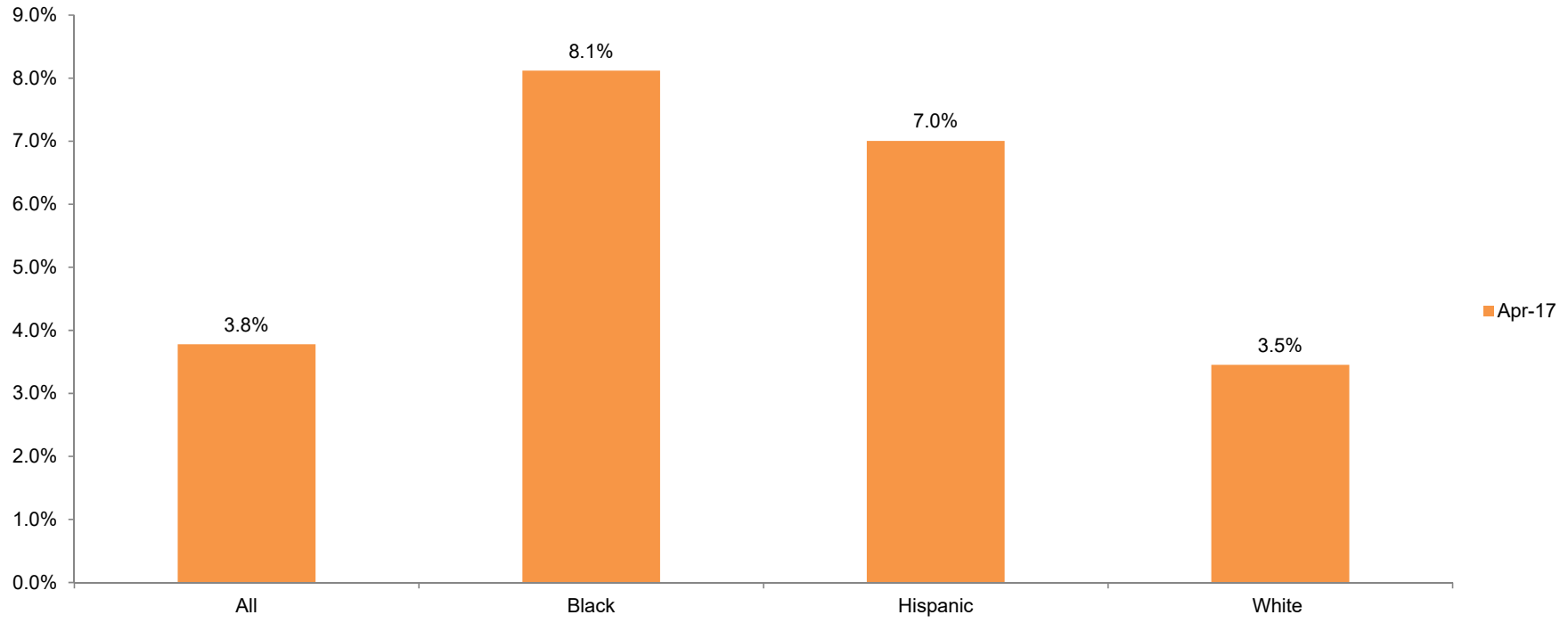
Since the year 2005, labor force participation has declined by 5% for 20-24 year olds and has declined by almost 10% for 16-19 year olds. Labor force participation for seniors has increased since 2005 by approximately 7%.



Source: BLS Current Population Survey, 12 Month Moving Averages

State Unemployment Rate by Race

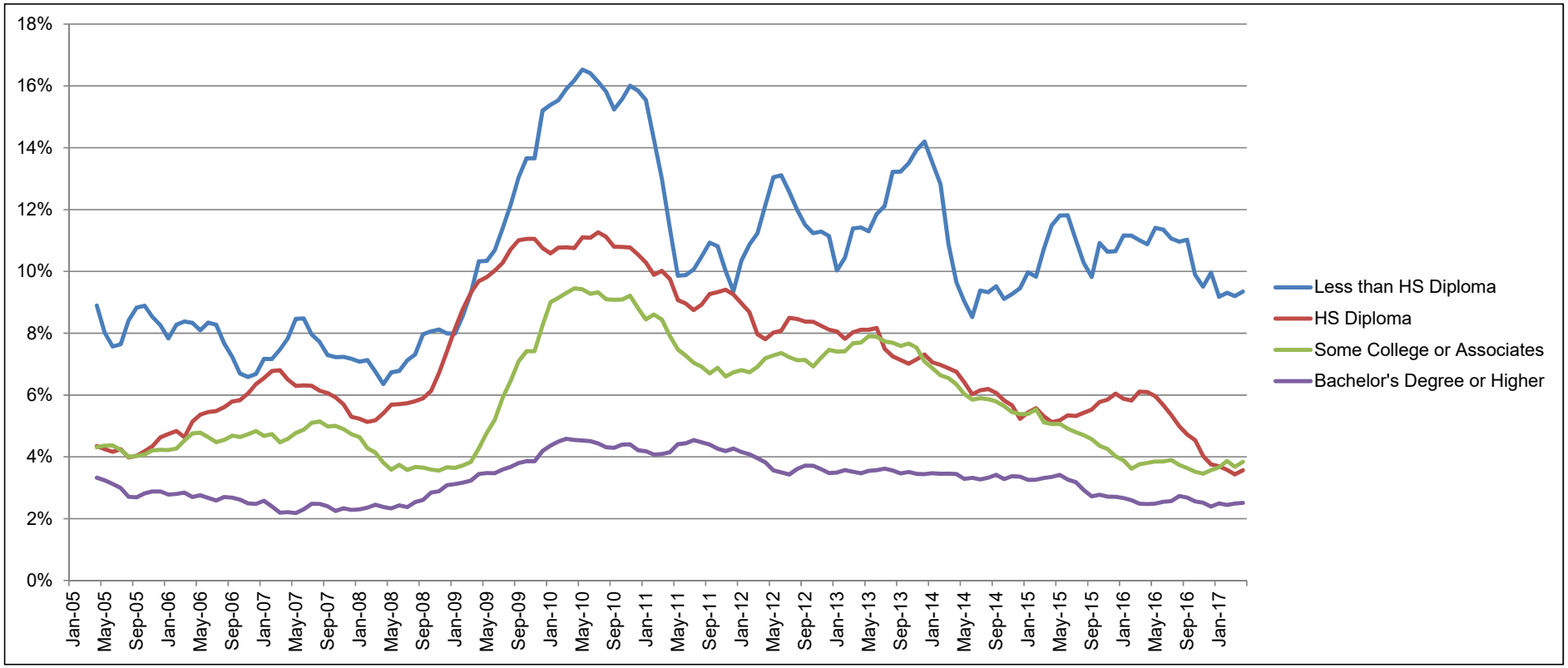
The white unemployment rate aligns with the state average, whereas Black and Hispanic unemployment rates tend to significantly exceed the trend.



Source: BLS Current Population Survey, 12 Month Moving Averages

State Unemployment Rate by Education, 25+

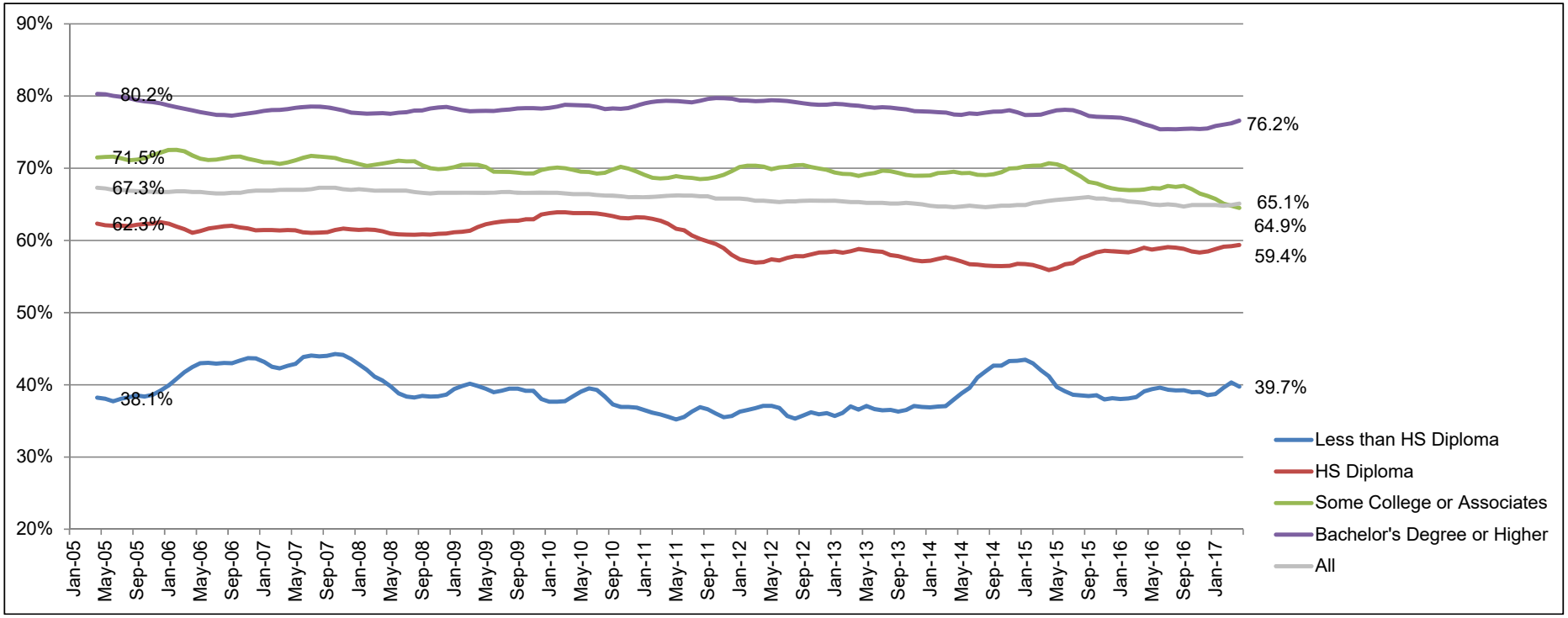
Higher levels of education tend to correlate with lower unemployment levels and more stability during uncertain economic times.



Source: BLS Current Population Survey, 12 Month Moving Averages

State Labor Force Participation by Education, 25+

Higher education levels are correlated with higher labor force participation rates. However, as the unemployment has declined, labor force participation has also declined in all categories except sub-high school.



Source: BLS Current Population Survey, 12 Month Moving Averages

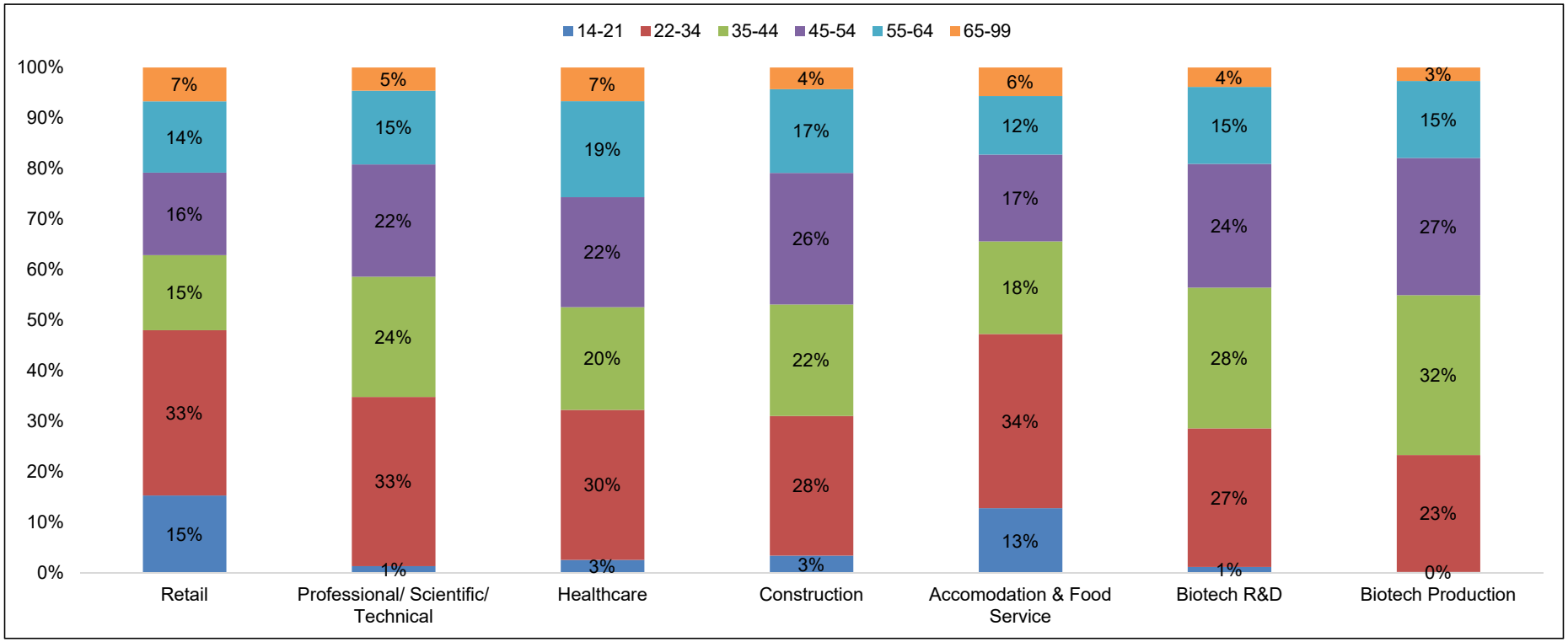
Takeaways

- Labor force participation has not recovered after the recession.
- Compared to pre-recession, less young people are in the labor force, and older residents are working longer.
- Minority populations experience higher levels of unemployment and less consistent levels of labor force participation.
- Compared to pre-recession, less educated workers are in the labor force.

II. Priority Industry Demographics

Priority Regional Industries by Age

Among priority industries, more than 50% of workers are under 45 in all industries. The Healthcare workforce is the oldest of the priority industries; more than 1 in 4 workers are older than 55. The Retail and Accommodation & Food Service workforce is concentrated at the ends of the age spectrum, with a large number of under-21 employees working alongside those over 55.

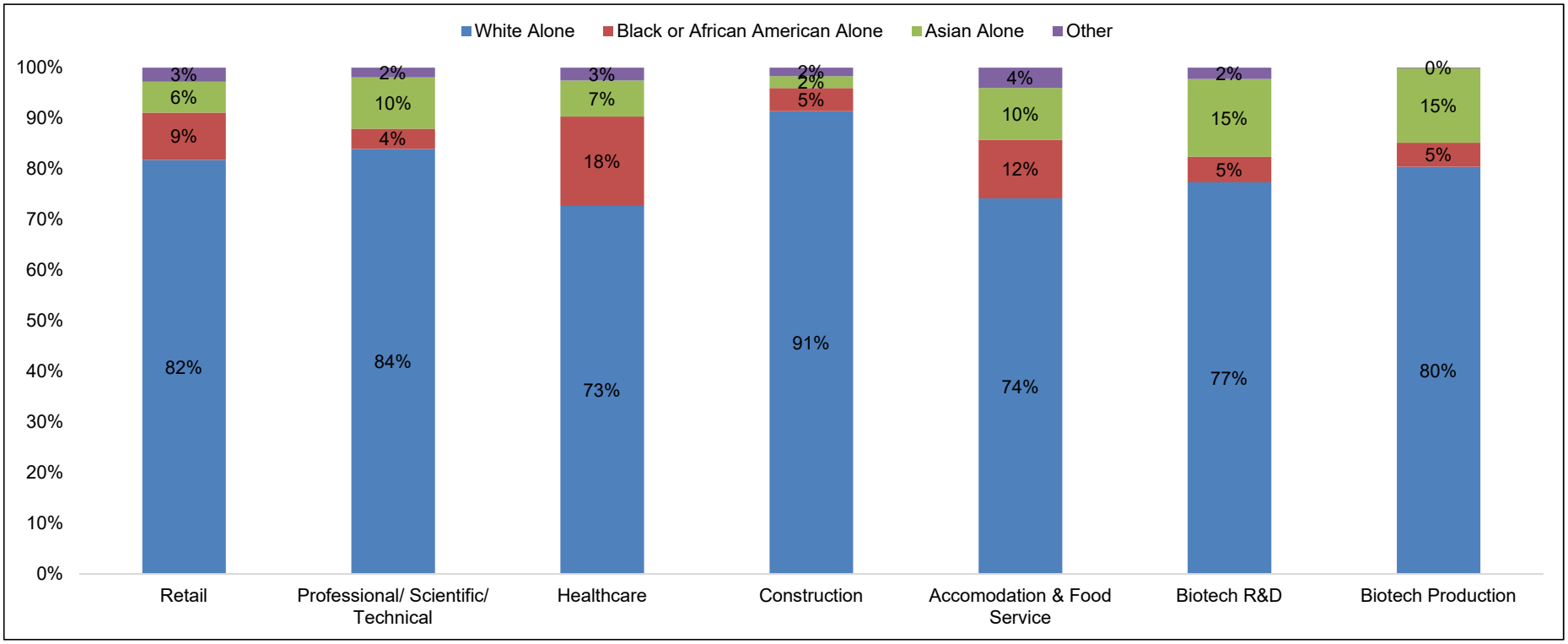


Source: US Census Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators Q2 2016

Confirming Industry Priorities
Industry Overview: Race and Ethnicity

Priority Regional Industries by Race

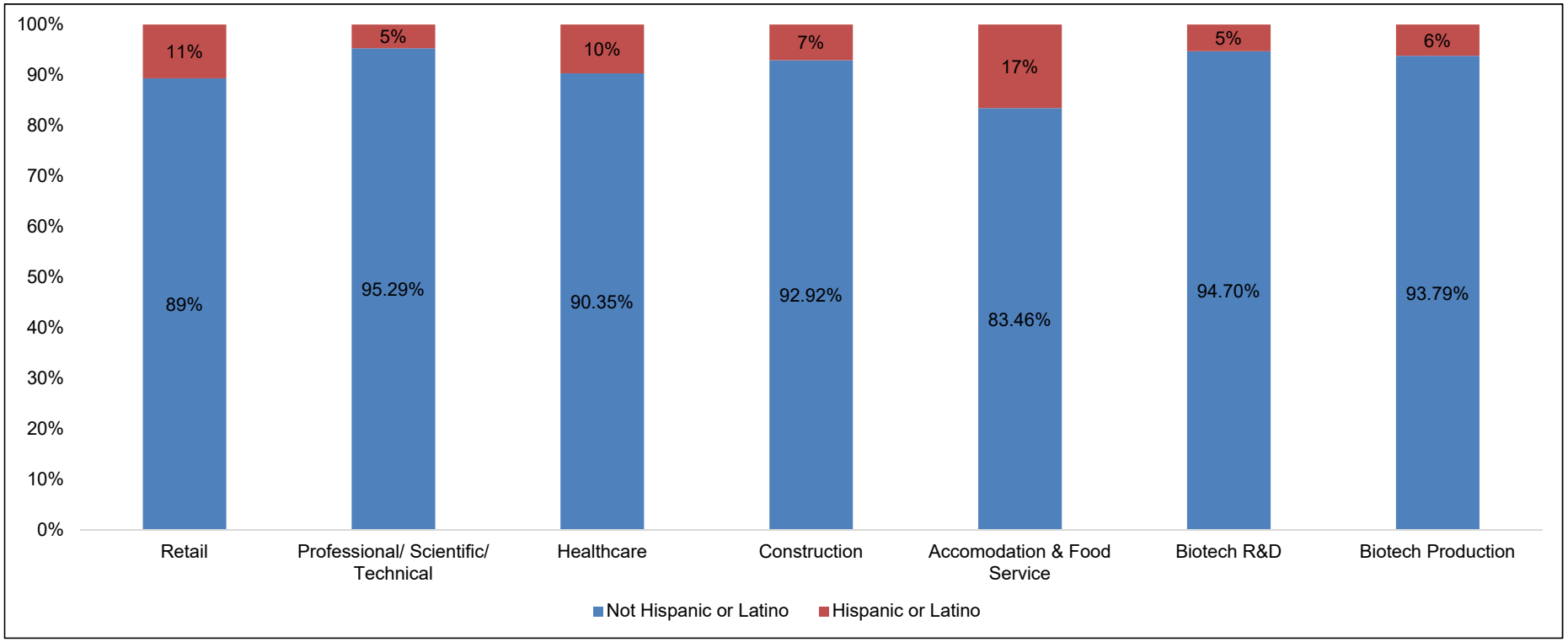
Construction is the least diverse sector, while Healthcare, Professional and Technical Services, and Retail are the most racially diverse sectors.



Source: US Census Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators Q2 2016

Priority Regional Industries by Ethnicity

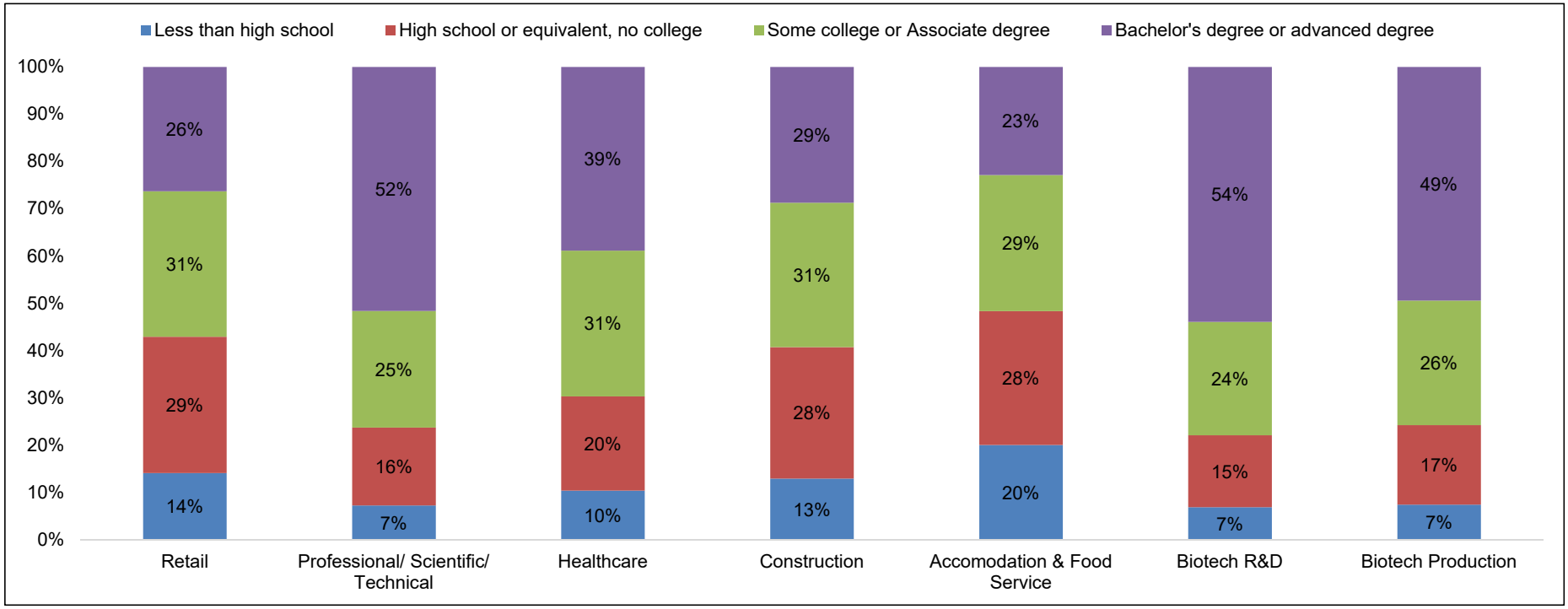
Accommodation and Food Service, Retail, and Healthcare have the highest concentration of Hispanic and Latino workers.



Source: US Census Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators Q2 2016

Priority Regional Industries by Educational Attainment

Given the high concentration of Bachelor's Degree attainment in Greater Boston area, the widely disparate levels of bachelor's attainment (from 23% in accommodation and food service to 54% in Biotech R&D) indicate significantly varied workforce needs. PST and Biotech industries generally offer opportunities for individuals with more postsecondary education, whereas other priority industries offer more opportunities for workers across all educational levels.



Source: US Census Longitudinal Employer-Household Dynamics: Quarterly Workforce Indicators Q2 2016

Takeaways

- More than 50% of workers in all priority industries are younger than 45.
- Healthcare, Professional and Technical Services, and Retail are the most racially and ethnically diverse sectors. Construction is the least racially diverse sector.
- Given the high concentration of Bachelor's Degree attainment in Greater Boston area, the widely disparate levels of bachelor's attainment (from 23% in accommodation and food service to 54% in Biotech R&D) indicate significantly varied workforce needs. PST and Biotech industries generally offer opportunities for individuals with more postsecondary education, whereas other priority industries offer more opportunities for workers across all educational levels.