

January 2012

Joint Report: *A Skilled and Educated Workforce*

Information Item

The *Master Plan for Higher Education* sets aggressive goals for degree production. The Plan acknowledges a need for growth in STEM and Health related programs as the system grows overall to meet the needs of students and Washington. This report is designed to identify high employer demand occupations and further target growth to meet the needs of the economy.

The report is required under 28B.76.230 to assess “the number of forecasted net job openings at each level of higher education and training and the number of credentials needed to match the forecast of net job openings.” The Higher Education Coordinating Board “shall produce, jointly with the State Board for Community and Technical Colleges and the Workforce Training and Education Coordinating Board, an assessment of the number and type of higher education and training credentials required to match employer demand for a skilled and educated workforce.” This is the third in the series of biennial reports published by the three agencies in response to the 2004 statute.

The results of this report indicate that looking over the long range, gaps between current degree production and employer demand are expected. The analysis looks at current numbers of completers entering the labor force and average annual demand in 2014-2019. The analysis does not make any adjustment to account for net in-migration of educated workers.

The report finds that:

- To meet the projected needs of employers, we will need an additional 9,000 completers at the mid level, 10,000 at the bachelor’s level, and 9,000 at the graduate level annually by 2019.
- At the mid level, high demand fields are identified as health shortage occupations; installation, maintenance and repair; manufacturing and production; accounting and bookkeeping; human and protective services; and science technology.
- At the baccalaureate level, high demand fields are identified as computer science, engineering, and health, life sciences and agriculture, and physical science occupations.
- At the graduate level, high demand fields are identified as computer science, engineering, health, life science and agriculture, physical science, and human and protective service occupations.
- Further analysis is required of education fields at all levels. In addition, it appears there may be shortages within the social science and media and communication occupation groups.



A Skilled and Educated Workforce 2011 Update

Higher Education Coordinating Board

January 26, 2012

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Purpose of this report

The report is required under 28B.76.230 to assess “the number of forecasted net job openings at each level of higher education and training and the number of credentials needed to match the forecast of net job openings.”

The report addresses this mandate using the long range occupational forecast and estimates of program graduates who would likely be entering the workforce. It should be noted that:

- The report does not fully address the impact of new and emerging occupations and industries (due to limitations of the forecast).
- The report looks at the post-recessionary period expected during 2014-2019.
- The report assumes no net in-migration into Washington of certificate and degree holders.

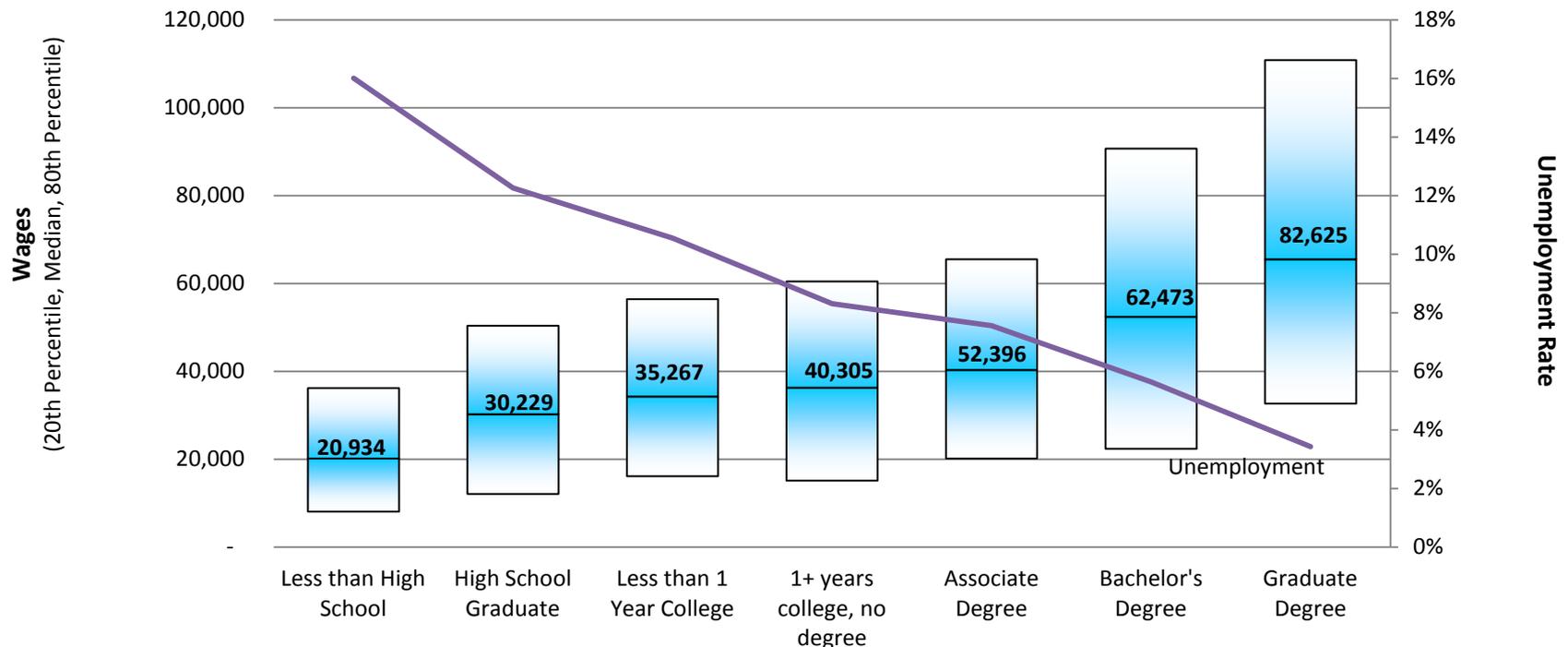
The report addresses two major issues

- 1) Identification of High Employer Demand Occupations
- 2) Aggregate Demand for higher education degrees and certificates

Education Level

- Workers with higher levels of education tend to earn more and experience lower rates of unemployment.
- At each level there is a range of earnings that varies by field of study and occupation.

2010 Wages and Unemployment by Education Level



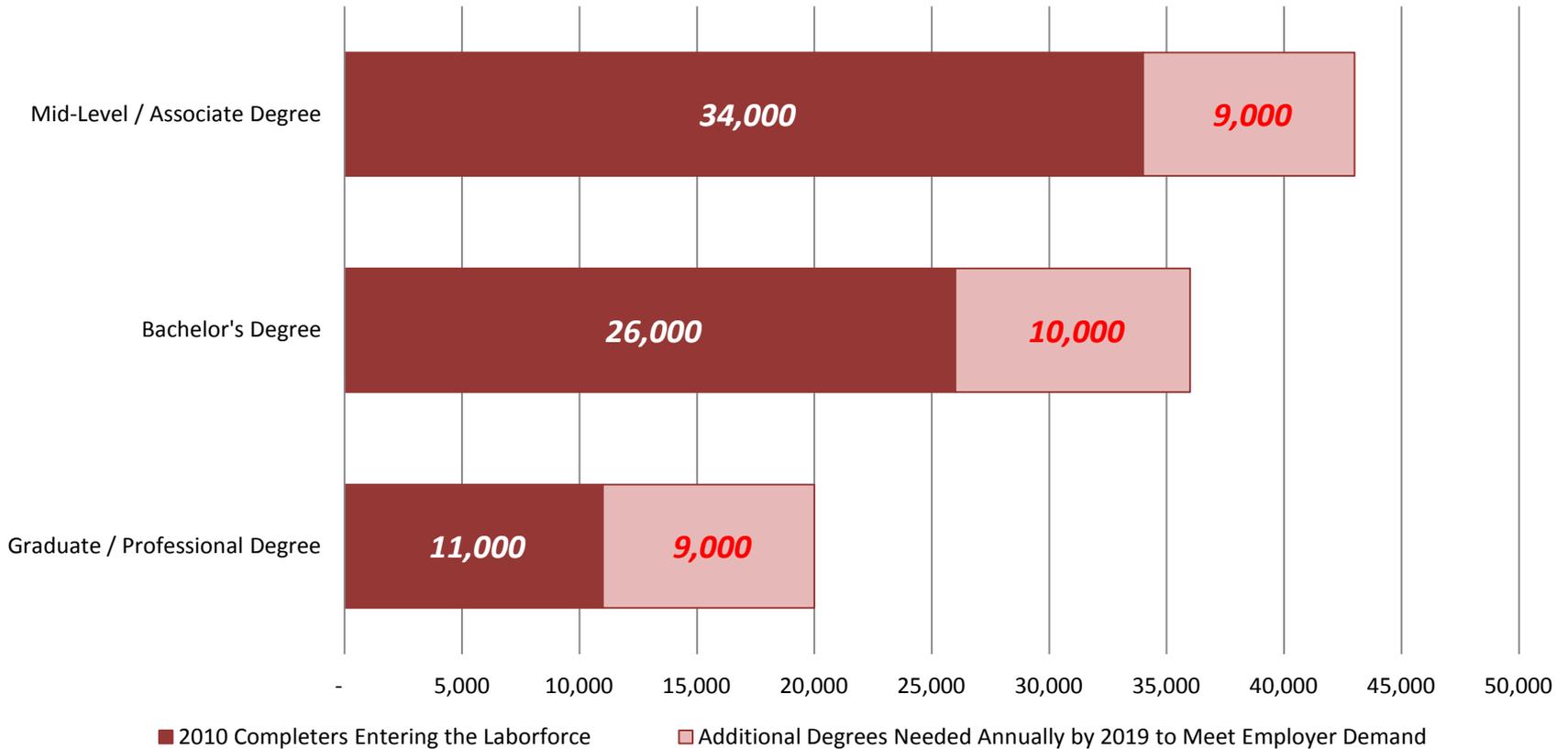
Source: 2010 American Community Survey. Wages include civilian employed WA residents age 25-64. Unemployment rate reflects civilian labor force for WA residents age 25-64.

Gap Analysis

- Gaps are calculated based on current supply and anticipated annual demand by education level in 2014-2019.
- For occupations the analysis looks at the size of the gap and occupations with unique education and training requirements.
- The analysis recognizes that training at a variety of levels is required for some occupations.

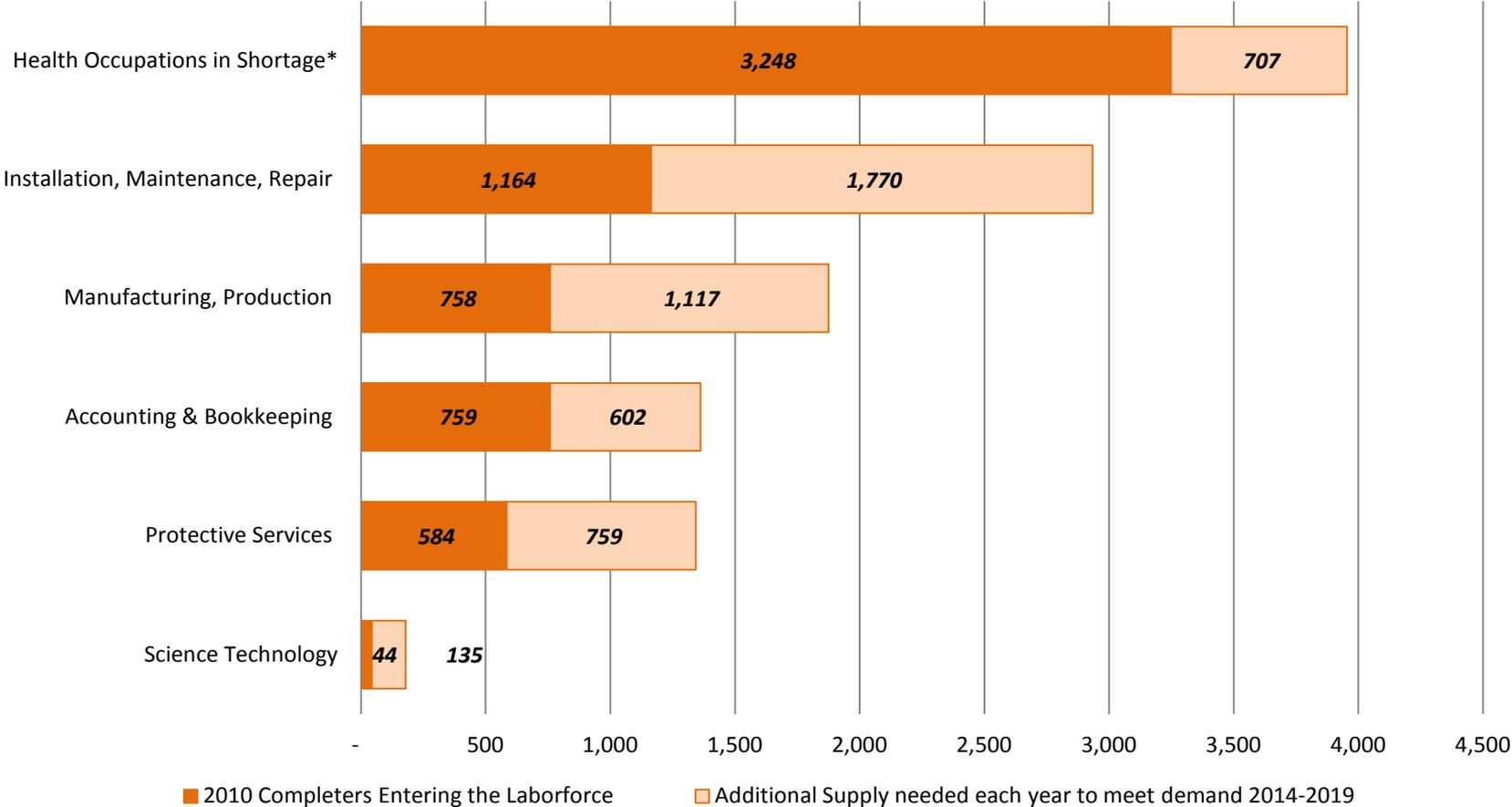
Supply and Demand

**Annual Supply and Demand of Workers by Education Level
2010 Supply and Annual Average Openings 2014-2019**



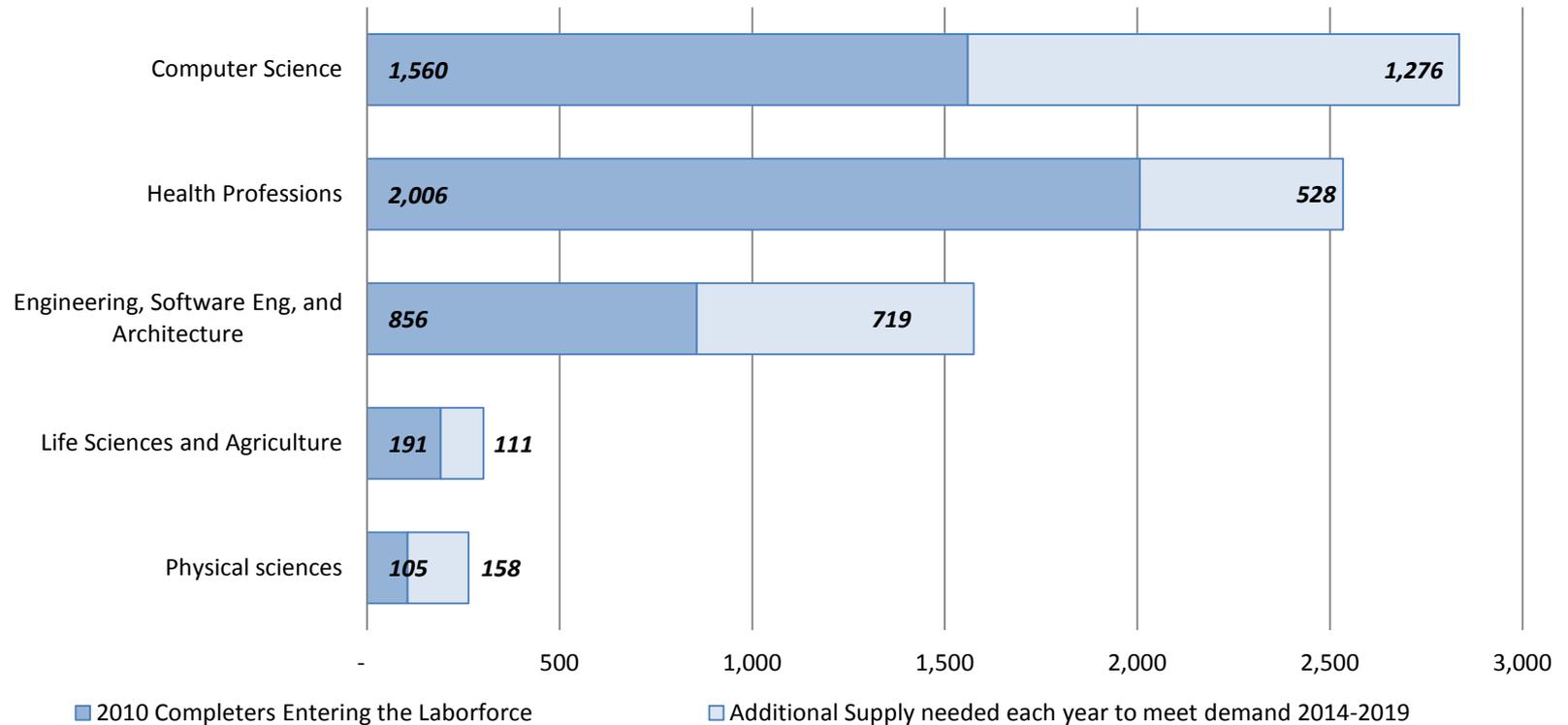
Mid Level Gap Analysis

**High Employer Demand Occupations at the Mid Level
2010 Supply compared to 2014-2019 Demand**



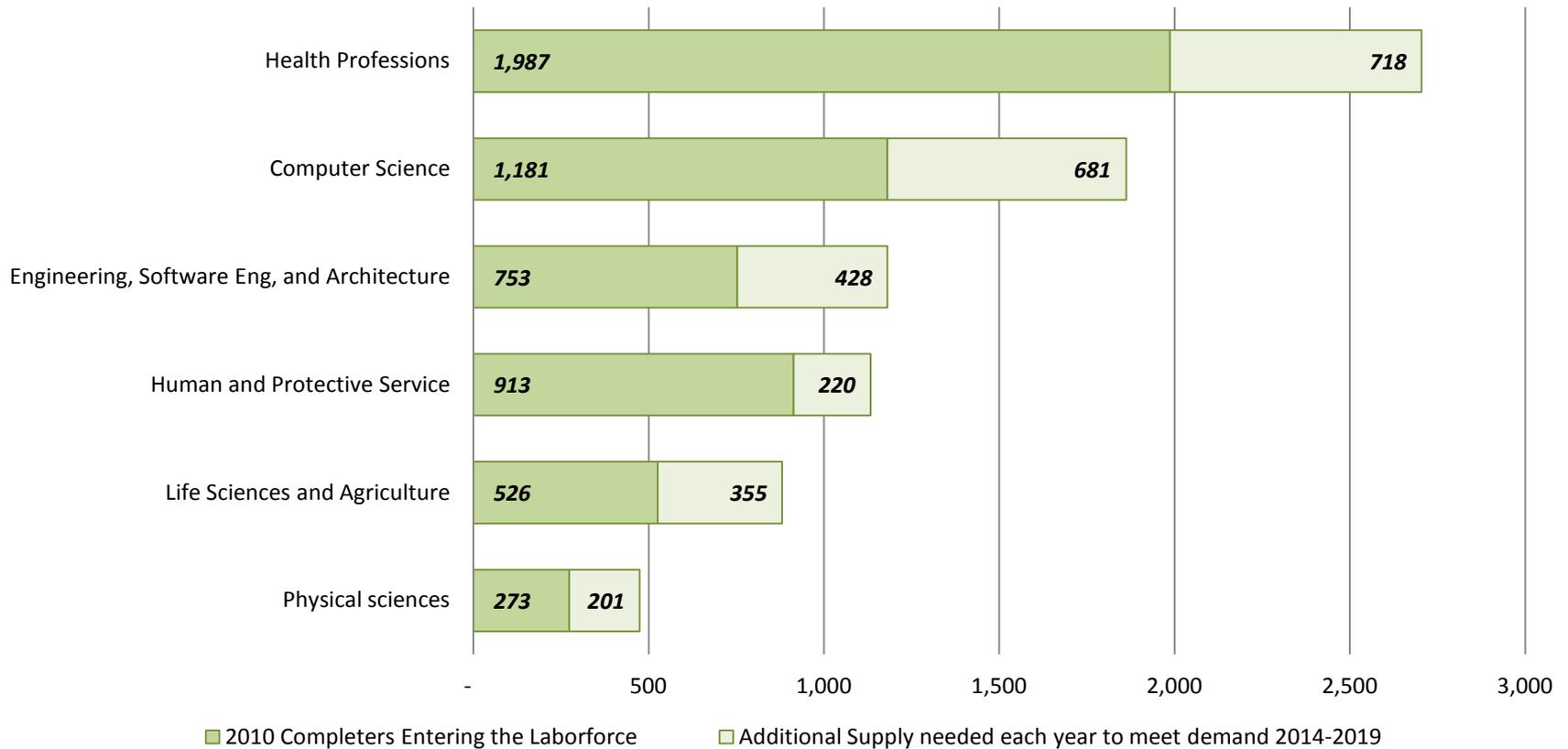
Baccalaureate Gap Analysis

High Employer Demand Occupations at the Baccalaureate Level. 2010 Supply compared to 2014-2019 Demand



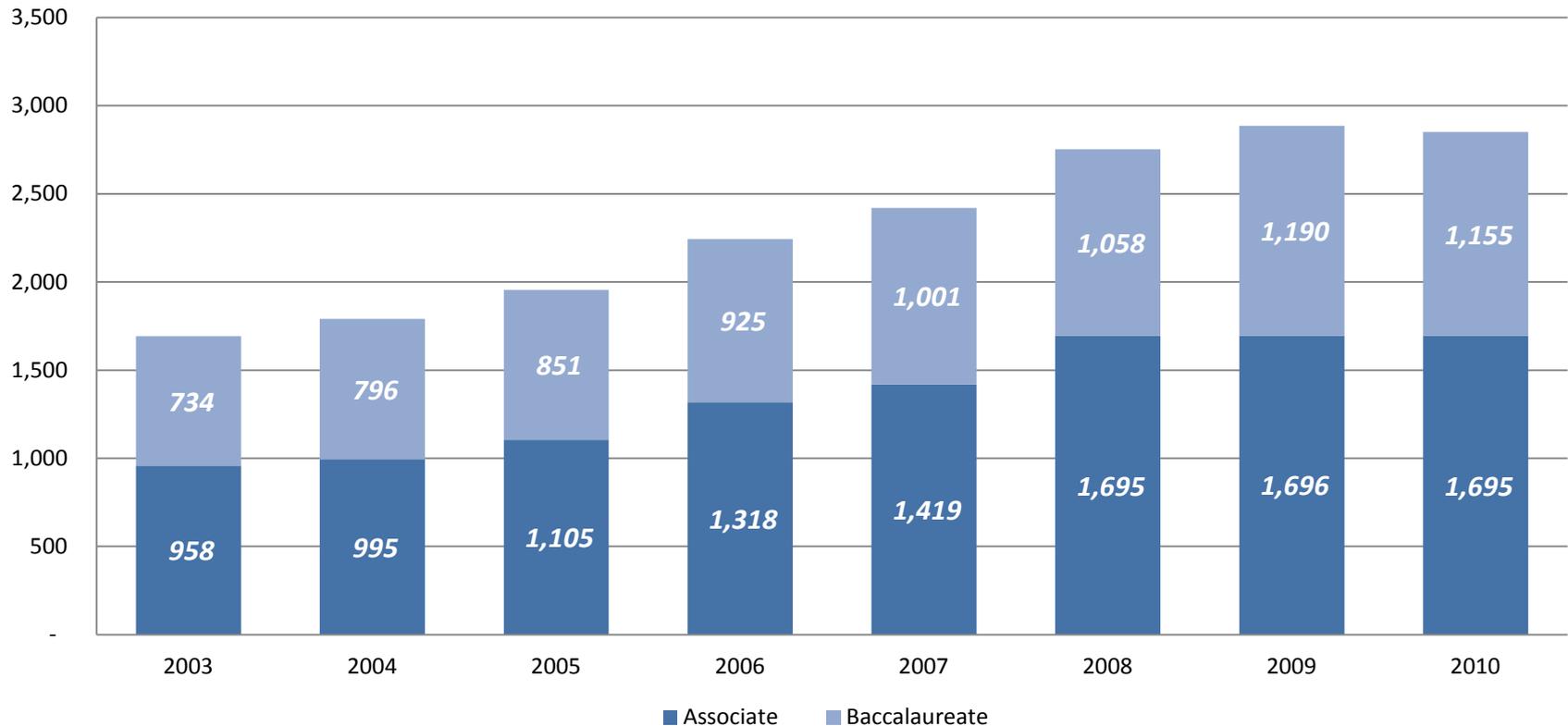
Graduate Gap Analysis

High Employer Demand Occupations at the Graduate Level. 2010 Supply compared to 2014-2019 Demand



Where have we made progress?

Annual Registered Nursing Program Completions 2003-2010



Source: Health Professions Education In Washington State: 2003—2010 Completion Statistics. Workforce Training and Education Coordinating Board, 2011

Aerospace Workforce Requirements

- A higher share of the workforce is employed by the Aerospace industry in Washington than in any other state – and we rank second to California in overall aerospace employment.
- Recent increases in the Boeing orders have yet to be reflected in detailed labor market forecasts for the aerospace industry.
- However, employer surveys and Census data, allow us to identify the general mix of occupations used in Washington's aerospace industry.

Key Aerospace Occupational Groups

Occupational Group	Approximate Recent Labor Force	Primary Education Level(s)
Engineers & Engineering Managers (primarily Aerospace & Industrial)	14,000	BA, some grad
Aircraft Assembly & Maintenance Specialties	8,000	Certificates, some AA & OJT
IT – Primarily Programmers, Engineers and Scientists	6,000	BA
Procurement, Budget, Logistics, Operations Research	4,000	BA, some certificates
Drafting & Engineering Technicians	3,500	AA, Certificate, BA
Machinists	3,000	Certificates
General Production & Assembly Occupations	3,000	Certificates, OJT
Inspectors, testers, samplers, incl. transportation inspectors	3,000	Certificates, OJT
Computer & Numerical Controlled Manufacturing	2,000	Certificates
Production Supervisors	1,600	BA to OJT

Next Steps

Work on final printed report is in progress.

Series of follow-up briefs:

- Aerospace industry
- Education and related occupations
- Healthcare occupations

Questions?



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- Bryan Wilson, Workforce Training and Education Coordinating Board, bwilson@wtb.wa.gov.