

**THE COLORADO  
TALENT  
PIPELINE  
REPORT**

**PRESENTED TO THE  
COLORADO STATE  
LEGISLATURE  
OCTOBER 15, 2015**



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*Presented to the Colorado State Legislature October 15, 2015*



The Colorado Workforce Development Council is an industry-led coalition of state agencies and their local system partners, collaborating to align the work of economic development, workforce development, education and training to meet the needs of Colorado's students, jobseekers and businesses.

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In accordance with 24-46.3-103 C.R.S. as amended by SB 14-205, this Talent Pipeline report was prepared by the Colorado Workforce Development Council (CWDC) in partnership with the Department of Higher Education, the Department of Education, the Department of Labor and Employment, and the Office of Economic Development and International Trade, with support from the Office of State Planning and Budgeting and the State Demography Office at the Department of Local Affairs.



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## EXECUTIVE SUMMARY



**I**n accordance with 24-46.3-103 C.R.S., this Talent Pipeline Report was prepared by the Colorado Workforce Development Council (CWDC) in partnership with the Department of Higher Education, the Department of Education, the Department of Labor and Employment, and the Office of Economic Development and International Trade, with support from the Office of State Planning and Budgeting and the State Demography Office at the Department of Local Affairs. This report provides insight into the state's educational attainment data, occupations with positive outlooks, analysis of in-demand skills, and education/training strategies currently being enacted in Colorado. It also provides recommendations for future work to improve our state's talent development system.

Colorado has a reputation for meeting its workforce needs in part by attracting a large share of highly educated workers from out-of-state; Colorado must also ensure that the education and training pipelines within the state are adequately preparing youth and adults for the workforce and are aligned with the needs of the economy. We know that our conventional talent pipeline of students completing high school and directly entering a college or university and graduating on-time accounts for just a portion of our students, and that there are a number of productive pathways an individual can follow to acquire essential skills for employment.

As part of our state strategy to streamline such opportunities, we are utilizing sector partnerships, such as the Northern Colorado Manufacturing Partnership and Greater Metro Denver Healthcare Partnership, to expand the work of outlining career pathways, identifying specific competencies for critical positions in their region and sector, and forging tighter partnerships across regional educational entities to cultivate the talent pipeline for local businesses.

While Colorado has above average adult educational attainment levels, there are significant educational attainment gaps between Asian and white adults, as compared to Hispanic, black and Native American adults. Indeed, there continues to be disproportionate underrepresentation of these minority populations at our colleges and universities, as well as disproportionate employment in various fields. Many factors contributing to this situation start early in an individual's life, and include socio-economic conditions, cultural influences and family history. In this report we explore how these manifest in educational and career choices and options.

After highlighting some of the challenges in our education pipeline, this report explores Colorado jobs that have high growth rates and openings, and typically offer a living wage. Many of the occupations that meet these parameters are concentrated in healthcare, information technology, construction and extraction, and business and finance. The vast majority of these jobs typically require some level of formalized postsecondary training/education. As noted in the first annual Talent Pipeline Report, better alignment of skills terms and definitions across education and workforce entities would more clearly communicate the intersections and expectations for successful employment in Colorado. Earlier this year, Colorado's Departments of Education and Higher Education collaborated with the Colorado Workforce Development Council to facilitate a discussion of statewide participants from business and industry, education, higher education, non-profit organizations, and government sectors.

The group identified 20 core skills necessary to enter the workforce or continue education beyond high school; these include skills such as critical thinking, creativity, self-direction, cultural awareness, time management and self-advocacy.

A final section provides recommendations for continuing to improve our talent development network. Recommendations include:

- Continue expansion of concurrent enrollment and embed concurrent enrollment as a critical career pathways tool to align education, training and work-based learning, so students and potential employees have a clear picture of what education and experience is necessary to pursue a specific career;
- Research policy and statutory barriers or perceived barriers to work-based learning, and provide resources and incentives to elevate and accelerate coordinated initiatives for the development of experiential learning partnerships between business and providers;
- Support policies to re-engage adults who lack appropriate skills and/or credentials in educational settings so that they can acquire the skills and credentials necessary to enter and to participate more fully in the workforce; and
- Strengthen cross-agency data sharing capabilities, so as to have access to critical information needed for better decision-making.



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# INTRODUCTION

Colorado continues to be recognized for its strong economy, low unemployment rate and highly educated workforce. At the same time, our regional economies and educational attainment levels vary greatly. Supporting the economic success of Coloradans and Colorado businesses requires us to better understand and promote a thriving talent pipeline throughout our state. As the economy continues to grow and flourish, we must enact multiple strategies to meet our workforce needs that both support the success of our own “home grown” students and workers while continuing to attract workers from outside the state.

Pursuant to statute (C.R.S. §24-46.3-103), this second annual Talent Pipeline Report will:

- Provide analysis of Colorado’s population in terms of demographic patterns that impact our potential workforce pool;
- Discuss our state’s top jobs;
- Analyze skill sets that are in high demand;
- Present a progress report on policies and practices linked to Colorado’s talent development system; and
- Share recommendations to advance Colorado’s talent pipeline, career pathways and data-related practices/opportunities.

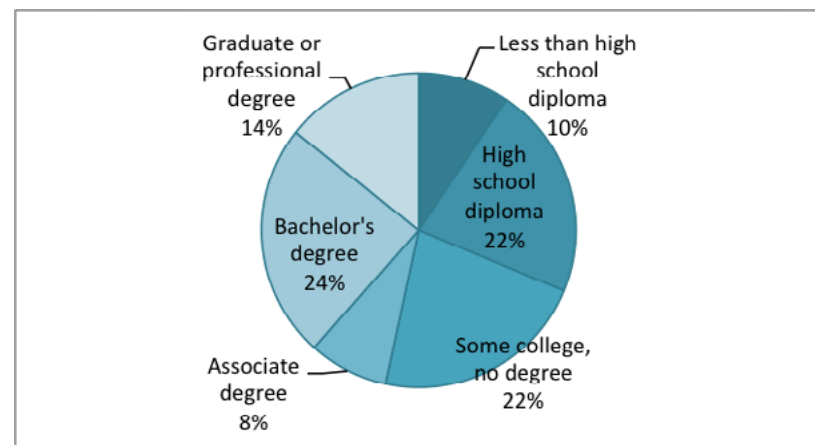
## TRENDS IN COLORADO'S TALENT PIPELINE

Colorado has one of the most highly educated populations in the nation, with 68 percent of our adult population having some level of college experience or an earned credential.<sup>1</sup> Nearly 46 percent of our adult population has an associate degree or higher, exceeding the national average of 38 percent (U.S. Census Bureau, 2014). However, educational attainment levels are not necessarily equal across racial/ethnic and socio-economic demographic groups, and it is important for us to be aware of such issues so as to better prepare our state’s talent pool and plan for our economic future.

### WHAT IS A TALENT PIPELINE?

Our use of the term “talent pipeline” refers to the pool of currently employed and potential workers to fill positions requiring various skills, knowledge and abilities in our state. In this case, we are focusing on the progression of Coloradans through our secondary and postsecondary educational and training systems into the workforce.

Figure 1: Colorado Educational Attainment, Adults 25 Years and Older



Source: U.S. Census Bureau; 2014 American Community Survey, 1-year estimates

<sup>1</sup> This includes individuals who fall into the “some college, no degree” category—a category that includes adults with certificates, adults currently enrolled in college, and adults who have completed some coursework, yet did not complete a credential

1.67 million

Despite our state's high educational attainment levels overall—with 1.67 million Colorado adults holding an associate degree or higher—there are still 330,000 adults in Colorado without a high school diploma or equivalent, about 780,000 adults whose highest level of education is a high school diploma, and 300,000 to 400,000 adults with previous college experience, but no completed certificate or degree. It is worthwhile to consider the training needs and incredible potential of Coloradans who have not completed a postsecondary credential or apprenticeship as an important resource to tap into in further developing our skilled talent pool.

### Educational Attainment Levels by State of Birth

In the first Talent Pipeline Report issued in January 2015, we noted that our state's growing economy has long relied on the in-migration of highly educated individuals, as long-term trends show Colorado has typically been growing jobs faster than its natural population growth rate. Compared to other states, Colorado has one of the highest percentages of adults born elsewhere, as 70 percent of Colorado adults were not born in the state of Colorado (U.S. Census Bureau, 2014). On a positive note, Colorado-born adults living in Colorado have higher education levels relative to native born populations of other states and overall national education levels (Figure 2, below). This is an important point of comparison, as higher education levels typically reveal higher geographic mobility; it is a common trend for a state to import highly educated people from other states, while residents with lower levels of education and often lower income levels have fewer resources to facilitate a long-distance move. Ensuring the availability of continued education and training opportunities for Coloradans with lower levels of education remains key to supporting the skilled talent pipeline for middle skills jobs in particular, as well as supporting the economic sustainability of individual Coloradans.

For more information, check out the State Demography Office's [report](#) on educational attainment by place of birth.

### Racial/Ethnic Educational Attainment & Workforce Gaps

While our state's overall adult educational attainment levels are quite high, there is considerable variance in education levels for different subsets of our population, with Hispanic, black and Native American adults having significantly lower education levels than those of white or Asian adults (Figure 3). For example, just 20 percent of Hispanic adults over 25 years old hold a college degree, as compared to 53 percent of non-Hispanic white adults (U.S. Census Bureau, 2014). Many factors contribute to these discrepancies, such as inadequate academic preparation, financial constraints and familial/cultural dynamics.

There continues to be disproportionate underrepresentation of these minority populations at our colleges and universities, as well as disproportionate employment in various fields. Benefits are numerous to having a diverse workforce, including being able to more effectively connect to customers of different

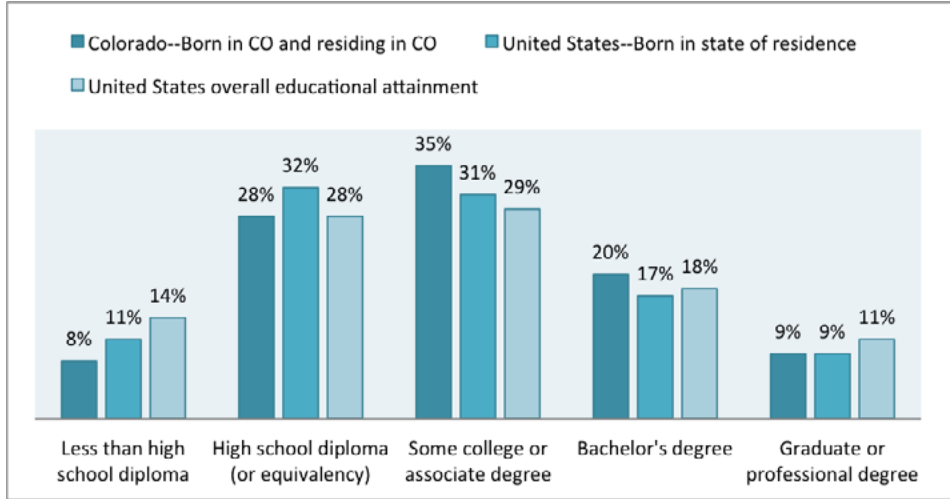
backgrounds or identities, increased creativity and increased productivity (Kerby & Burns, 2012). The gaps in educational achievement by race/ethnicity start from a young age, continue through K-12 education, and manifest in postsecondary educational attainment levels because of the significant gaps and leaks that are compounded along the entire educational and training pipeline.

In particular, the growing Hispanic population is changing the ethnic composition of our state, and thus the face of our future workforce. In Colorado, 31 percent of youth under the age of 18 are Hispanic (U.S. Census Bureau, 2014); the potential implications for our future workforce are significant if large segments of our population are not equipped with adequate and beneficial training and education to meet the needs of our economy.

While Colorado has seen gains in educational achievement for individual racial/ethnic groups over the past twenty-five years, the between-group differences in achievement begin early in one's life (National Center for Education Statistics, 2015). Along each step of the educational trajectory—from K-12 through postsecondary education—underserved minorities continue to lag behind non-Hispanic white and Asian populations in educational measures such as K-12 school state assessments (Figure 4, below), high school graduation rates, college remediation rates, postsecondary enrollment and college completion rates (Figure 3, below), although gaps have narrowed over the years for some of these measures (NCES, 2015).

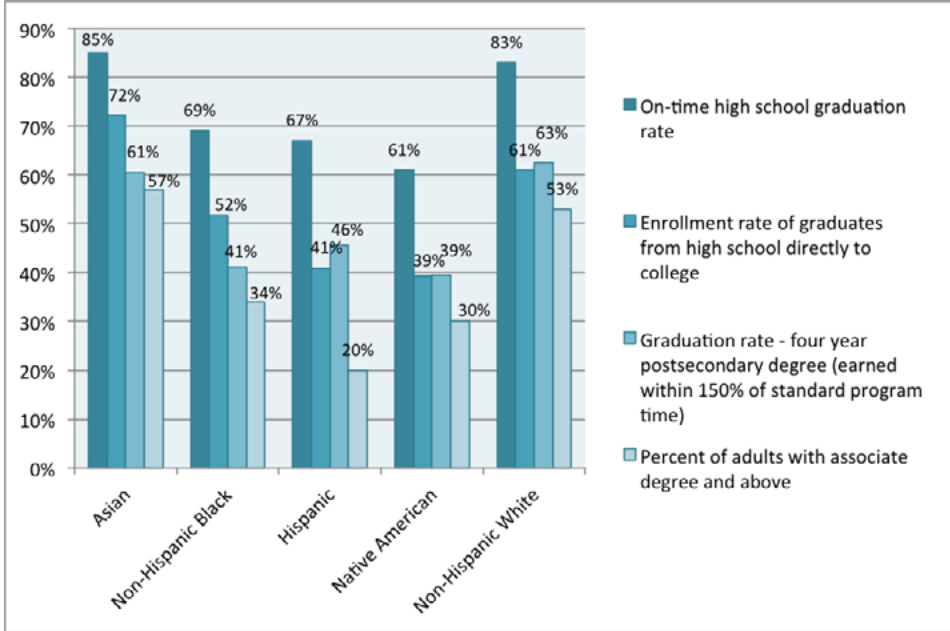


Figure 2: Comparison of Educational Attainment Levels by State Residency Status



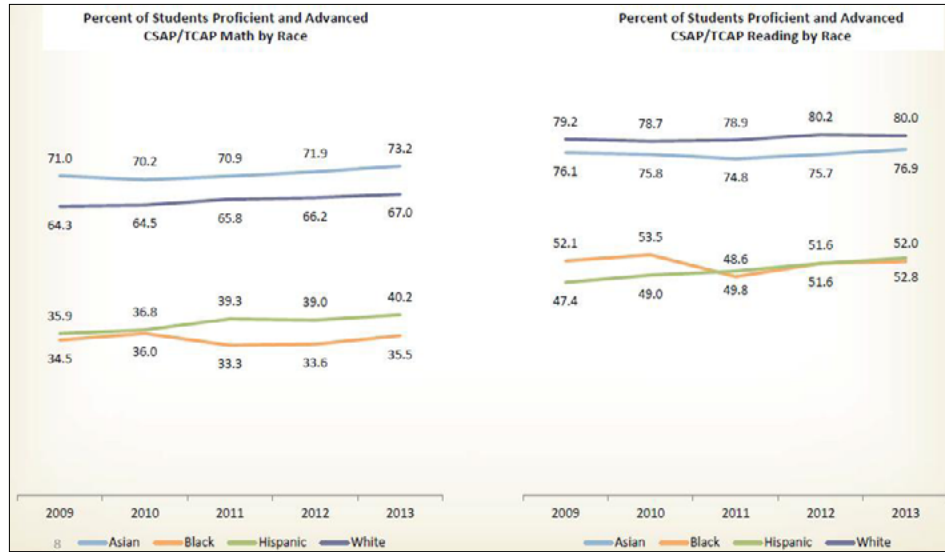
Source: U.S. Census Bureau; 2014 American Community Survey, 1-year estimates

Figure 3: Education-related Metrics by Race/Ethnicity



Source: Colorado Department of Education; Colorado Department of Higher Education; U.S. Census Bureau

Figure 4: K-12 Assessment Gaps by Race/Ethnicity



Source: Colorado Department of Education

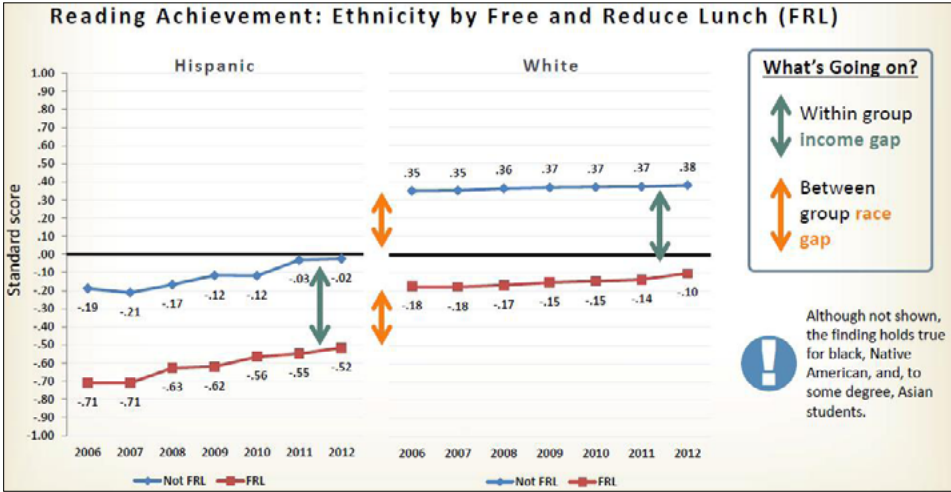
It should not be surprising that if the educational outcomes of our Hispanic and black students at the primary and secondary school levels are generally lower than that of other student populations, then these students are often not adequately prepared to tackle the demands of rigorous postsecondary programs. Substantial gaps in foundational skills can also lead to particularly distinct racial/ethnic underrepresentation in science, technology, engineering and math (STEM) programs and many high STEM skill careers. For instance, while 18 percent of Colorado’s workforce is Hispanic, six percent of workers in computer, engineering and science occupations, 10 percent of workers in business and financial occupations, and eight percent of healthcare practitioners are Hispanic (U.S. Census Bureau, 2013). In addition, there are certainly significant gender gaps in numerous postsecondary STEM program enrollments and in the workforce. For example, only 24 percent of workers in computer-related

occupations and 15 percent of engineers are female; likewise only 18 percent of computer science credentials and 21 percent of engineering credentials are earned by women. Women are also an underutilized resource to train for such high skill, financially rewarding jobs. Even though college access has improved for underserved minorities, they are more likely to attend open-access two and four year colleges than the most selective four year colleges and are more likely to require remediation. Even for high achieving Hispanic and black high school students, they are more likely to attend two year colleges than their equally high achieving white peers (Carnevale & Strohl, 2013).

*How does Income Fit into the Picture?*

Certainly, there is also correlation in educational outcomes by minority status and income level. Poverty impacts student performance across all races; however, even when controlling for income, performance gaps still exist for students of color. Below, Figure 5 illustrates the achievement gaps between Hispanic and white students, while also depicting the compounding influence of income level.

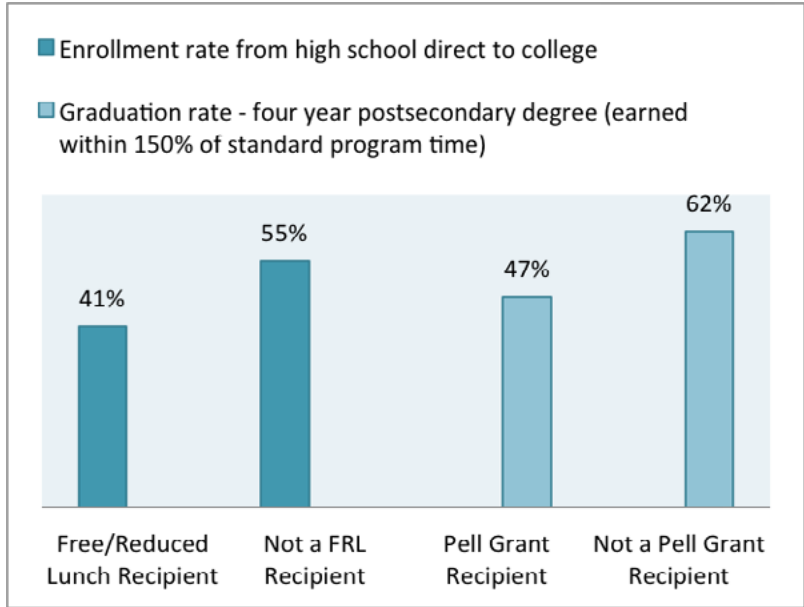
Figure 5: K-12 Reading Assessment Standard Deviation by Income and Race/Ethnicity



Source: Colorado Department of Education

Research also shows that socio-economic status impacts one’s educational achievement outcomes (NCES, 2015). For example, college enrollment rates are lower for high school students receiving free or reduced lunch; college graduation rates are lower for college students receiving need-based federal Pell grants (Colorado Department of Higher Education, 2015) (Figure 6).

Figure 6: Postsecondary Enrollment and Graduation Rates by Income in Colorado



Source: Colorado Department of Higher Education

Fifty-nine percent of undergraduate underserved minorities are Pell eligible, while 37 percent of non-Hispanic white and Asian undergraduates are Pell eligible (Colorado Department of Higher Education, 2015). While the poverty rate for families with school age children in Colorado is 14 percent overall, for Hispanic, black and Native American families that rate is 21 percent (U.S. Census Bureau, 2013). These minorities are also more likely to be concentrated in high poverty primary schools that typically have a less experienced and less stable teaching force, which can also contribute to students' postsecondary preparedness and higher remediation levels upon entering college. Yet, as depicted above in Figure 5, income levels do not fully account for all differences in achievement.

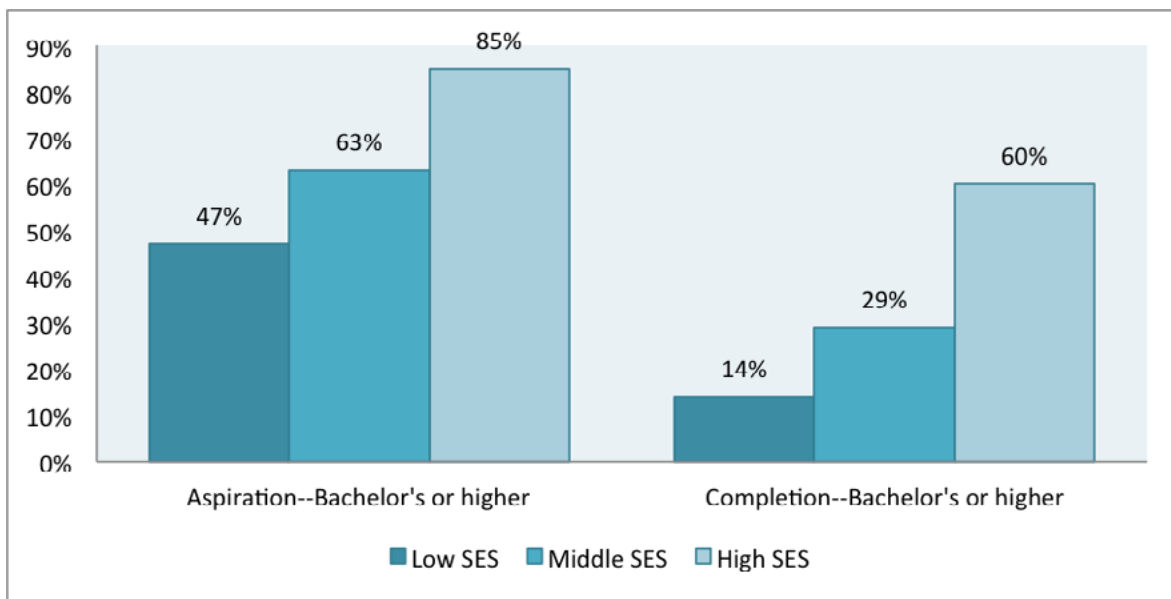
For instance, researchers have analyzed the likelihood of an adult reaching the middle class if one completes three conventions: graduate from high school, maintain a full-time job or have a partner who does, and, if one chooses to be a parent, have children while married after the age of 21 (Sawhill & Haskins, 2008). About 75 percent of Americans reach the middle class if they follow all three (and today one can argue that the urgency to acquire postsecondary training/education is even more consequential). However, the outcomes are not the same for all races, even if they follow all three norms; in Denver,

82 percent of white adults who follow these three norms have incomes greater than 300 percent of the federal poverty line, whereas 68 percent of black adults who follow all three norms achieve this (Gold, Rodrigue & Reeves, 2015).

Other research focused on socio-economic status (SES), through a national survey of high school seniors, found that educational aspirations of high school students differed by SES, as did actual educational achievement eight years later (NCES, 2015). For each income group, while aspiration levels do correspond with subsequent achievement, aspiration levels for all groups were higher than actual outcomes.

The same study shows that the sources from which students acquire information about educational opportunities differ by income level. While similar percentages of low, middle and high income high school students seek college information from their school counselor (78 to 81 percent), higher percentages of middle and high income students seek information from a parent (43 percent for a low income high school student to 73 percent for a high income student), as well as acquire information from a college representative (51 percent for low income students as compared to 80 percent for high income students). Of the low income high school students who were actually successful in completing a bachelor's degree, 91 percent sought information

Figure 7: Bachelor's or Higher Aspiration in High School and Subsequent Completion by Socio-Economic Status



Source: NCES, 2015

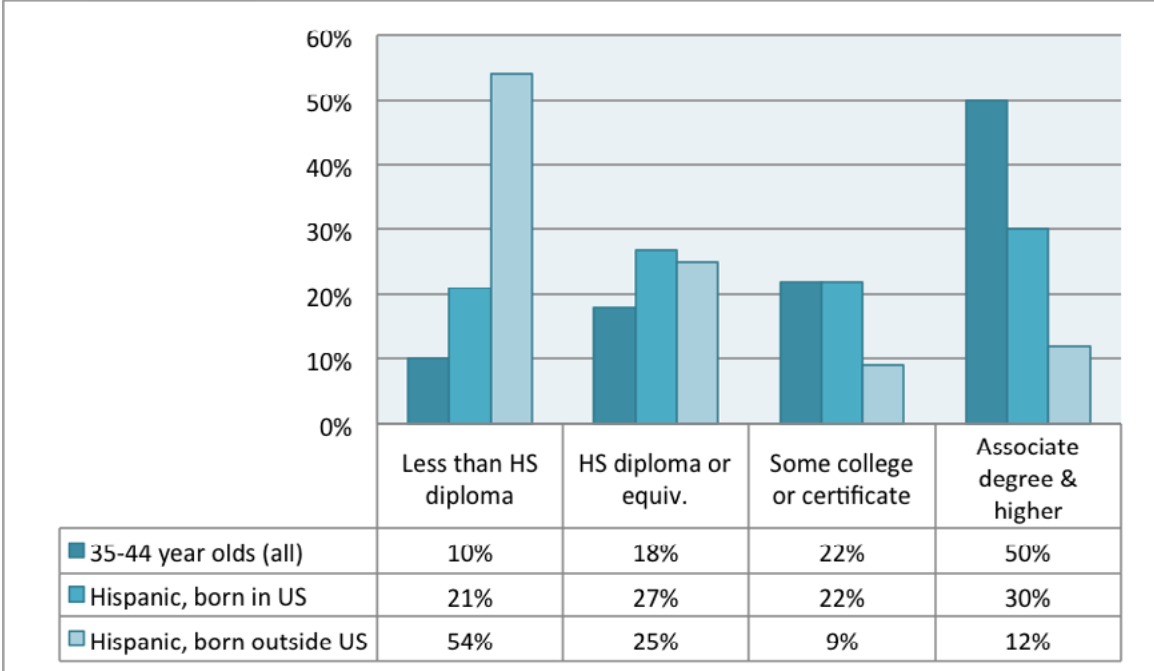
from a school counselor, 66 percent sought information from a relative outside of their immediate family and 74 percent sought information from a college representative. This clearly highlights the importance of available and informed counselors to support students who may not otherwise have the familial knowledge of education and training options beyond high school.

**Native and Foreign Born Hispanic Educational Attainment Levels**

Beyond the non-Hispanic and Hispanic education gap, there is also a significant gap between native and foreign born Hispanics, and this trend is true nationally, as well. In Colorado, when we look at education levels for Hispanic 35 to 44 year olds, 30 percent of native born Hispanics have an associate degree or higher, whereas for those who were born outside of the United States, 12 percent have an associate degree or higher (see Figure 8, below). In comparison, for all 35 to 44 year olds in Colorado, 50 percent have an associate degree or higher (U.S. Census Bureau, 2013). There is also a significant difference between foreign born Hispanic adults who do not hold high school diplomas (54 percent) as compared to native born Hispanic adults (21 percent).

A national survey by the Pew Hispanic Center (2009) found that Hispanic young adults largely value a college education, but a number of factors—such as financial pressures or inadequate English language skills—often impact their continuing education. Research has also shown that foreign born Hispanic youth are more likely than native born Hispanic youth to be parents by the time they are 25, or have obligations in financially supporting a family here or abroad—factors that may also impede one’s pursuit of further education.

Figure 8: Highest Level of Education Attained by Ethnicity and Place of Birth (35 to 44 Year Olds)



Source: U.S. Census Bureau; 2011–2013 American Community Survey, 3-year estimates

### *The Future of Colorado's Talent Pipeline*

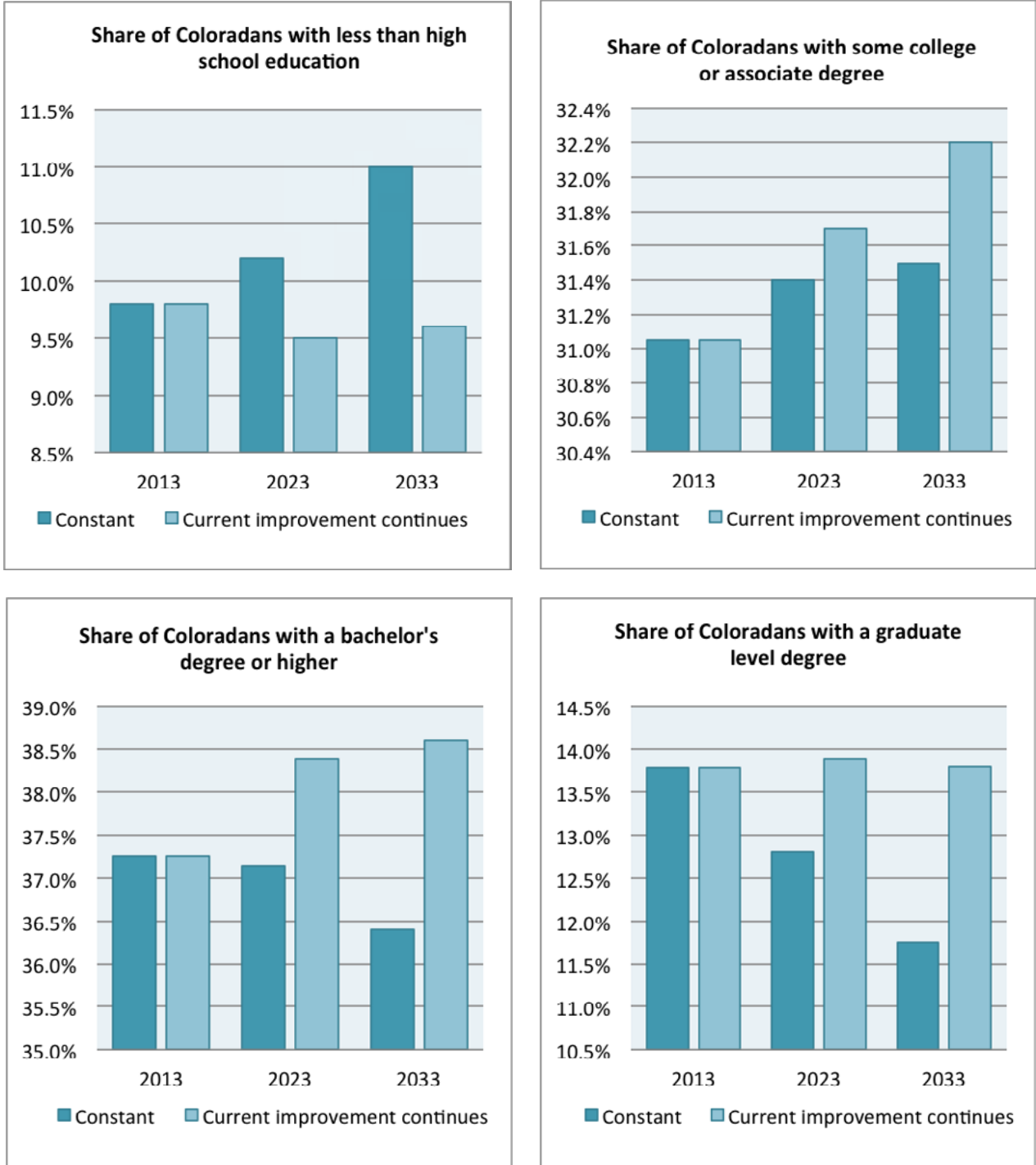
So, what will Colorado's future skilled workforce look like? Colorado's Hispanic population is fast growing, with significant growth anticipated in the age groups of 18 to 44, which will impact the ethnic composition of our workforce. With significant educational attainment gaps by race/ethnicity, there is concern about the overall education levels of our state's workforce in the decades to come.

The State Demographer's Office has begun initial analysis of this issue by forecasting two potential outcomes for educational attainment levels of adults in Colorado. One projection assumes that education levels by demographic group remain constant (at 2013 levels) for the projected period of 2014 to 2033. The other projection assumes a continuation of trends in increasing educational attainment levels as seen from 2006 to 2013 by racial/ethnic group and gender. The foreign born population was held as a constant share of the Hispanic population in the trend projection, as it is difficult to predict future migration patterns.

- If Colorado does not continue to experience gains in educational attainment by race/ethnicity, then we can expect to see declines in the share of the population with a bachelor's degree or higher and even more significant declines in the share of the population with a graduate or professional degree (see Figure 9, below). The share of the population with less than a high school education would also increase given the expected changes in our demographic structure (Figure 9).

- If Colorado continues to experience similar increases in educational attainment of high school diplomas and above by race/ethnicity that it has over the past seven years, Colorado will see increases in the share of the population with a bachelor's degree or higher, as well as increases in the share of the population with some college or an associate degree between now and 2023 (Figure 9).

Figure 9: Projected Educational Attainment Levels for Colorado Adult Population



Source: Colorado Department of Local Affairs, State Demography Office



Find out more about median earnings outcomes across different postsecondary certificate and degree programs in Colorado: [co.edpays.org](http://co.edpays.org). Graduate earnings show that there are credentials at the certificate or degree level with high market value, yet what you study also matters.

Supporting Diverse Populations in Colorado's Workforce

If we don't address these gaps in educational opportunities and attainment levels, then we risk not having enough educated and trained Coloradans ready for productive employment in our growing economy. It is in our state's best interest to provide all Coloradans with a variety of quality educational opportunities from an early age, so that developmental gaps can be addressed early on. It is equally important to promote the positive lifestyle and employment outcomes that are associated with being an educated individual overall. Related strategies include supporting the early exploration of work outcomes and the potential return

on investment that can result from various credentials, work-based learning, educational opportunities and career pathways. Though intuitive, it is worth noting that unemployment rates are lower for those with education beyond a high school diploma and median earnings also increase as education levels do (Table 1, below). Further discussion in this report will highlight diverse growing and well-paying fields—from skilled trades to information technology to healthcare and more—that present a range of education/training expectations, from apprenticeships to certificates to degrees.

In the first Talent Pipeline Report we also discussed employment prospects of unique populations such as unemployed youth or the long-term unemployed. These are populations that may require different types of specialized services to support their pathway to self-sustainability. The following highlights some of these populations, and related data points, as well as successes and challenges in supporting their training and employment, when available.

Table 1: Colorado Unemployment and Earnings by Education Level

Table with 3 columns: Educational Attainment, Unemployment Rate, Median Earnings. Rows include: Less than high school graduate, High school graduate, Some college or associate degree, Bachelor's degree, Graduate or professional degree.

Source: Current Population Survey, 2015; U.S. Census Bureau; 2014 American Community Survey, 1-year estimates

Unemployed Youth: The youth unemployment rate (ages 16 to 19) remained quite elevated throughout and following the Great Recession; more recently it has seen improvement. Over the previous 12-month period (August 2014 to July 2015), the youth unemployment rate stood at 13.3 percent; whereas, the year preceding it stood at 20 percent. However, the rate is still very high for black youth, in particular, at 34.5 percent (Current Population Survey, 2015). In Colorado, 11.8 percent of youth ages 16 to 24 are not in school and not working; the national rate is 14.1 percent (Opportunity Nation, 2015).

Long-term Unemployed: The long-term unemployed (individuals out of work for 26+ weeks) face a unique combination of social, emotional and skill deficiencies caused by the duration of their unemployment that require intensive "wraparound" services to address these issues effectively, while rapidly moving individuals to paid work experience and reemployment. Currently there are 27,400 individuals considered long-term unemployed; during the same period the year before there were 54,000 individuals who were considered long-term unemployed.

The Opportunity Index measures economic, educational and civic factors that foster opportunity. Out of all state scores, Colorado ranks 18th.

OPPORTUNITY YOUTH

Research on opportunity youth (also known as disconnected youth—youth ages 16-24 who may have dropped out of high school or college and also have trouble securing stable attachment to the labor market) describes significant social and financial burdens through lost output/wages and lost taxes, above average levels of criminal involvement and high use of social services. Minorities and males disproportionately represent opportunity youth. For more information, please read: The Economic Value of Opportunity Youth.



The share of long-term unemployed out of all unemployed persons also continues to decrease: currently, the long-term unemployed make up nearly one-quarter of all unemployed (down from one-third as reported in the previous Talent Pipeline Report released January, 2015) (Current Population Survey, 2015). Credit for this drop can be attributed to Colorado's improved economy, as well as to concentrated public and private initiatives. For example, Governor Hickenlooper's Hire4Colorado Campaign challenged businesses to give the long-term unemployed an opportunity to prove themselves and also increased awareness of services available through workforce centers for long-term unemployed individuals; there have also been targeted efforts by a number of agencies and organizations to impact specific populations such as veterans, older citizens, youth and others with challenges to obtaining employment.

**Veterans:** Unemployment rates for veterans are slightly elevated as compared to non-veterans (4.3 percent to 3.2 percent unemployment), although the gap has narrowed considerably, having been a 2.1 percent gap the year prior. Employment services for recently separated veterans play a critical role in the successful transition from military to civilian employment. The Colorado Department of Labor and Employment provides specialized services that are available only for eligible veterans, such as individualized job search assistance and case management for veterans with a service-connected disability or other barriers to employment, vocational and work-based training, and job fairs and hiring events specifically for veterans. Veteran-specific services are provided by Veteran Employment Representatives (VER)—highly trained staff who are themselves veterans, and understand many of the challenges that veterans face.

One considerable veteran-specific issue is that many transitioning veterans have training and expertise in critical skill areas, but lack the civilian credentials necessary to obtain employment in their career field. The Colorado Department of Labor and Employment, Department of Regulatory Agencies and Department of Higher Education are working together to identify military occupations that need civilian credentialing and licensing, compare military training with civilian requirements, and develop pathways to expedite the training and credentialing process. Initially, this collaboration will focus on healthcare occupations, specifically focusing on Certified Nursing Assistant (CNA), Licensed Practical Nurse (LPN), and Dental Hygienist.

**Disabled Individuals:** Frequently the first, and most intractable barrier underemployed or unemployed Coloradans with disabilities face, is nearly exclusive emphasis on what we expect that he or she cannot, should not, or is not doing. The lack of balance between a focus on functional limitation rather than on the person's talent and ambitions is expensive and wasteful. The Division of Vocational Rehabilitation (DVR) works to increase opportunities for employment, career advancement and economic gain for eligible Coloradans with disabilities. DVR provides one-on-one vocational guidance and counseling in order to understand and mitigate the ways a disability or emerging health concern impedes the capacity to show and apply talent at work.

In Fiscal Year 2014, DVR assisted 2,198 Coloradans with disabilities to secure, retain or regain employment. These workers earned an average of \$11.61 an hour working 28.2 hours a week on average. The Division of Vocational Rehabilitation takes pride in their

long-term commitment to serving the next generation of workers with disabilities. Their School to Work Alliance Program (SWAP) has been a central mechanism for demonstrating this commitment since the mid-1990s. SWAP is a partnership between DVR, school districts and BOCES across the state to assist young people between the ages of 15 and 25 who have lower education attainment levels and would benefit from mild to moderate assistance finding work. These partnerships benefit young people in communities statewide and account for 22 to 25 percent of the successes achieved by their participants during each of the last three fiscal years.

Individuals not only benefit from being productive members of the workforce, but the state benefits from a population that relies less heavily on social services; it is crucial to sustain a supply of capable workers that will continue to grow Colorado business while attracting others to the state. The following sections will focus on the fields that are experiencing strong growth and the strategies being employed to support the development of a workforce with aligned skill sets.

## THE PATHWAY TO DEVELOPING TALENT FOR COLORADO'S TOP JOBS

To contribute to a healthy Colorado, we must empower our students, jobseekers, unemployed and underemployed with good information and support systems to assist in career path choices that will work for their individual needs, as well as be responsive to industry demand.

It is our intent to better understand where individuals and organizations may wish to focus their efforts in order to cultivate credentials with a high labor market value, so that a worker can earn at least a living wage and our economy has critical positions filled. An analysis of high demand fields and skills follows.

### *Colorado's High Demand, High Wage Jobs*

To pinpoint "top jobs" in our state, this report uses labor market data from Colorado's Office of Labor Market Information to identify jobs that meet three criteria: projected high annual openings, above average growth rates and typically offer a living wage for a family with two adults (one working) and one child. While the majority of occupations remained on the list from the previous report, it is, however, a shorter list due to updated living wage data.

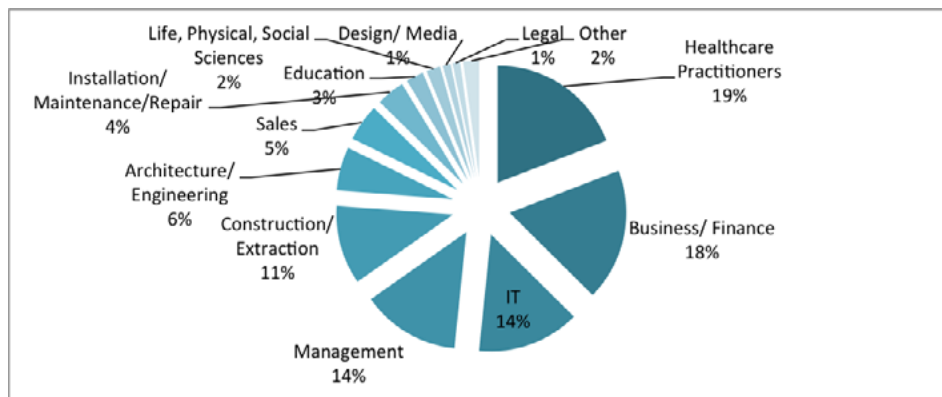
This is not an exhaustive list of occupations that offer opportunities for Coloradans; rather, it offers a glimpse into some promising industries in our state overall and can help guide our efforts in developing our state's workforce talent in various sectors. Also, many occupations that do not exist today may be in high demand in the near future, so we look to this list to provide us with fields where we can anticipate burgeoning opportunity.

Following is a sampling of some occupations found in this list by field. Much like the previous statewide Top Jobs list, occupations are largely concentrated in business/finance, skilled trades, information technology, and healthcare practitioners/technical occupations (see Figure 10, below). Jobs that are new to the list include market research analysts/marketing specialists, industrial engineers, medical and clinical laboratory technologists, and earth drillers. The complete list can be found in Appendix A. Regional lists based on regional growth rates and earnings can be found on the CWDC website.

Table 2: Selection of Occupations from the Top Jobs List

Skilled Trades	Business & Finance
Electricians	Accountants and Auditors
HVAC Mechanics and Installers	Cost Estimators
Industrial Machinery Mechanics	Management Analysts
Plumbers, Pipefitters, Steamfitters	Personal Financial Advisors
Healthcare	Information Technology (IT)
Pharmacists	Computer Network Architects
Physician Assistants	Computer User Support Specialists
Radiologic Technologists and Technicians	Software Developers
Registered Nurses	Web Developers

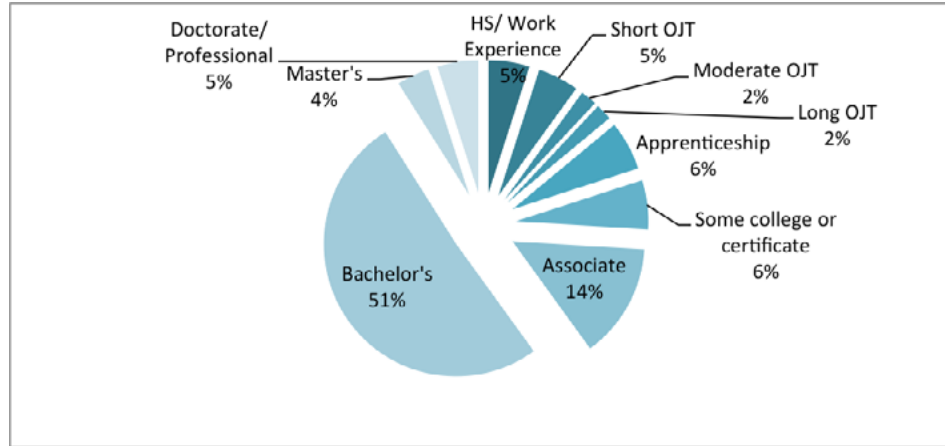
Figure 10: "Top Job" Opportunities by Field



Eighty-eight percent of job openings in this list are for occupations that typically require some level of formal postsecondary education or training for entry, whether it is an employer-sponsored formal training program, apprenticeship, certificate or degree (see Figure 11, below). Occupations on this list that require less than a bachelor's degree are primarily concentrated in the skilled trades and healthcare. Interestingly, when we do not filter for a minimum wage and focus on jobs that are simply projected to have above average growth rates, jobs in the trades and healthcare

support increase dramatically, indicating that there are a number of high demand yet lower paying jobs in these fields, many of which can serve as stepping stones to higher compensation. However, there are a large number of high demand jobs that don't meet the living wage target—such as administrative/office support, personal care services, or food preparation/serving. These occupations may not typically have clear pathways for earnings advancement, yet they can still provide exposure to critical skills and industries.

Figure 11: "Top Job" Openings by Typical Entry Level Education



Many occupations in this list are often defined as requiring high levels of competency in one or more STEM (Science, Technology, Engineering and Math) areas. According to the Brookings Institution's definition of STEM occupations,<sup>2</sup> 62 percent of the job openings on this list are considered STEM, while about 20 percent of occupations across our state's workforce overall are classified as STEM. Since this list includes high representation from finance, IT and healthcare occupations, most of which Brookings defines as STEM jobs, it is appropriate

that so many jobs on this list fall under this classification. According to the Bureau of Labor Statistics' definition of STEM occupations, 45 percent of jobs in this list are STEM, while out of all occupations in Colorado, about 14 percent are STEM by this definition. The STEM occupations listed here are also jobs that are more likely to expect some level of postsecondary education than that of non-STEM occupations. Essentially, the Top Jobs list demonstrates that various STEM competencies are in high demand and can lead to well-paying jobs in a number of fields.

### Skilling Up for a Top Job

While it's beneficial to highlight where there are high demand, good paying occupations so we can prioritize our investment strategies, it is perhaps equally as important to understand potential career pathways one can take to reach a career goal and the skillsets that one may need to acquire for job advancement. Indeed, a number of the jobs on the Top Jobs list have minimum education requirements in specific programs that are fairly standardized and difficult to bypass (e.g., to become a physician one must complete an undergraduate degree, medical school, a residency and licensure examinations). However, in many fields with optimistic outlooks, strategically acquiring specific skillsets and work experience can support one's career development—but understanding what a potential career path can look like with nuanced lateral moves and advancement is often unclear.

<sup>2</sup> The Brookings Institution uses O\*NET scores to establish occupations that require above average knowledge in one or multiple STEM categories.

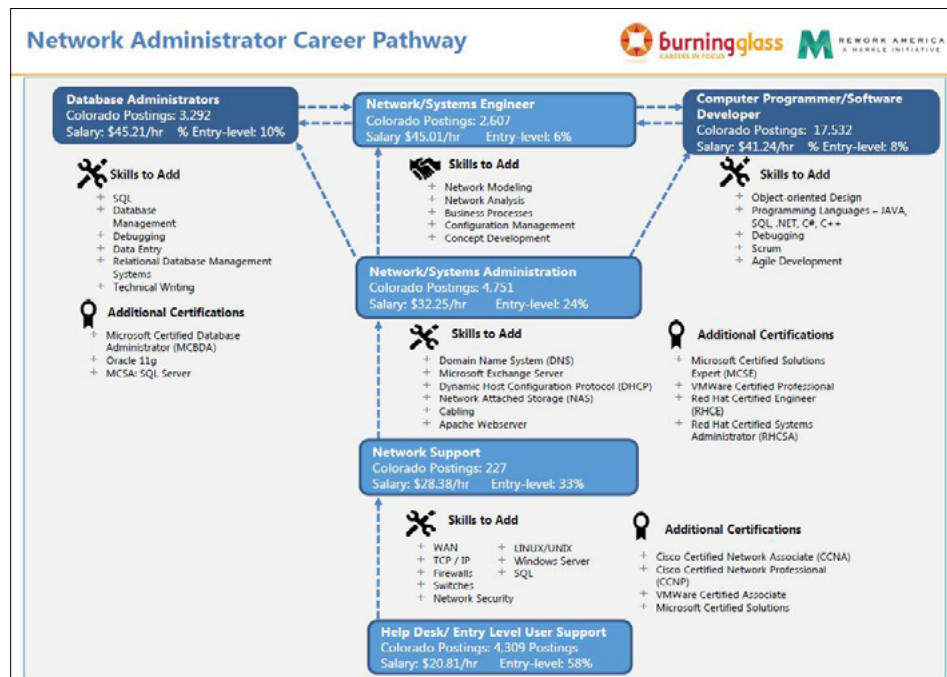
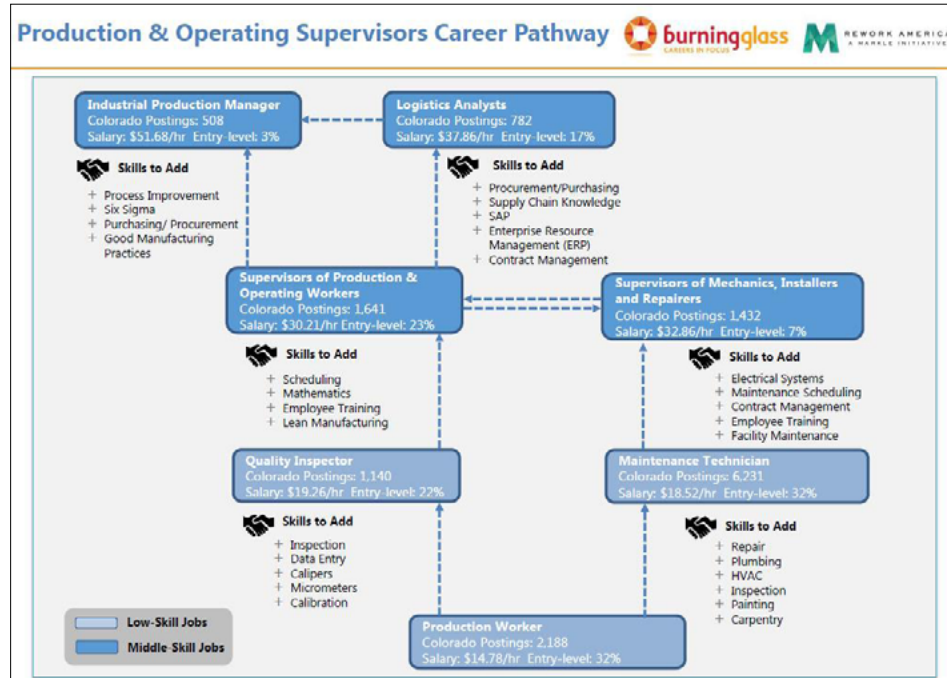
The good news is that initiatives and data exist to help interested stakeholders such as workers, educators and policymakers understand different career trajectories. This section discusses a number of approaches to better understand broadly transferable and field-specific skills that have high market value, including ways to use data to develop career pathways, LinkedIn data to examine high demand skills, and results from a Colorado workgroup composed of public and private education and industry partners.

The Markle Foundation's Rework America Connected Initiative (a coalition of partners including LinkedIn and edX) is working to develop a set of online tools and support networks to help connect middle skill Americans to jobs and training. The coalition has commissioned Burning Glass to conduct analysis of a number of career pathways focusing on occupations with positive outlooks in Colorado (see Figure 12 below for two such examples). These pathways are created by scanning thousands of online job posting boards to extract job titles, skills and education requirements, along with analyzing millions of resumes to understand trends in how people actually transition between jobs and industries.

These kinds of maps show skills and/or certifications that will likely prove beneficial to acquire to support one's growth in a field, and can be a launching point for identifying regional nuances, when applicable. Often, it is easy to think of specific vertical paths that a person might take to advance in their field; with this level of information we can explore more fully the opportunities that exist by moving laterally as well, creating broad work and training experiences that can lead to careers that otherwise might not be considered within an individual's reach. For example, an individual may start in the finance industry as a personal banker and move into a branch manager or loan officer position—roles that leverage similar skill sets. Through additional experience in different functional roles and perhaps in combination with acquiring a skill set through a course at a community college, one gains a more complete set of skills that puts them on an upward career trajectory.

As part of HB13-1165, the foundation for advanced manufacturing career pathways have been developed, mapping out potential career channels through which one can progress, and the experiences and skills one should acquire. This work has helped inform the skills analysis and career pathways efforts of the Northern Colorado Manufacturing Sector Partnership, and the methodology used will continue to provide other advanced manufacturing sector partnerships with a starting point to begin this work.

Figure 12: Examples of Career Pathways

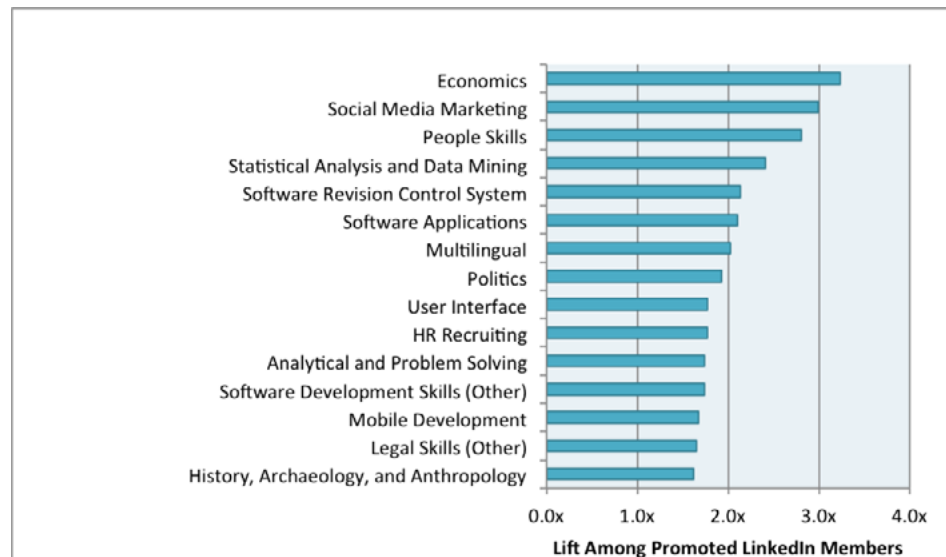


Source: Burning Glass and Rework America Connected Initiative

What else does it take to advance in today's job market? LinkedIn analyzed profiles of Colorado professionals and highlighted the skills of users who experienced a promotion from entry level to a more senior level position over the past year (June 1, 2014 to May 31, 2015) as compared to those who did not receive a promotion. The top 15 skill clusters found for this promoted workers are listed

below in Figure 13. "Lift" is a measure of the likelihood that a skill exists on a promoted member's profile; for instance, "economics" has a 3.2x lift, meaning that a member who experienced a promotion is 3.2 times more likely to have related skills such as econometrics or expertise with relevant data analysis software listed on their profile than a non-promoted member.

Figure 13: Skills of Promoted Coloradans on LinkedIn



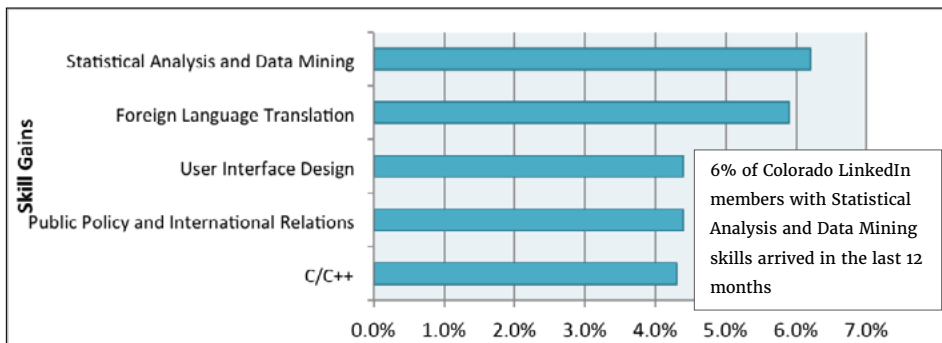
Source: LinkedIn, 2015

Many of these skills are related to skills expected of high demand fields in the state (such as IT); this is exemplified by the vast number of technology-related skill clusters in Figure 13, such as software revision control system (e.g., competency using tools like Git or Subversion), software applications (e.g., expertise in Primavera or SharePoint), and user interface (e.g., expertise in Word-Press or user experience design).

Yet, what is also interesting about this list is that it is not limited to technical skills—interpersonal skills, language skills and problem solving can also play a role in progressing one's career. Currently, LinkedIn's users are a sample of highly educated Coloradans (primarily bachelor's and graduate degree holders), so these data can perhaps provide more direct insight into fields often employing people with a bachelor's and higher; however, the work LinkedIn is doing with the Rework America collaborative is to re-define professionals to extend to a larger audience and getting organizations to more effectively hire based upon skills.

LinkedIn data also show the high influx of people moving into the state with many of the same skills encompassed by promoted individuals (see Figure 14, below). The fact that we are attracting workers with a number of these same skills common to those held by promoted individuals (e.g., statistical analysis and data mining, foreign language, user interface design, public policy, programming language), can be an indication that we are not generating enough of these highly desired skills in-state. Conversely, the absence of social media marketing in Figure 14 may demonstrate that this is a skill set that is more easily found in Colorado already or that more frequent promotions are characteristic of this career path.

Figure 14: Gains of Skill Sets from Individuals Moving to Colorado



Source: LinkedIn, 2015

need in-demand skills that meet business, industry, and higher education standards. Aligned high school graduation expectations are intended to be a roadmap to help students and their families plan for success after high school by demonstrating their knowledge, skills and abilities to enter the workforce, military or higher education without significant training or remediation.

Beginning in the spring of 2015, Colorado's Departments of Education and Higher Education collaborated with the Colorado Workforce Development Council to facilitate a discussion of

Ensuring students are prepared and have the in-demand skills to enter the workforce is an essential strategy to meeting needs of employers in Colorado. At the secondary level, the goal is for all students to understand and articulate their individual skill set, how they relate to potential careers and jobs, and graduate with these in-demand skills from high school. Colorado industry representatives are clear that students who graduate from high school and seek to work in Colorado

statewide participants from business and industry, education, higher education, non-profit organizations, and government sectors. Student voice was also an active part of the conversation. The goal of the work group was to identify skills to ensure Coloradans are prepared for work or education beyond high school. The group synthesized and identified the core skills from more than 100 established, industry-developed skills lists of the competencies necessary to enter the workforce or educational opportunities beyond high school (Table 3).

Table 3: Core Skills Needed for Preparation for the Workforce or Educational Opportunities Beyond High School

Entrepreneurial	Personal	Civic/Interpersonal	Professional
Critical thinking and problem solving	Initiative and self-direction	Core academic foundation	Time management
Creativity and innovation	Personal responsibility and self-management	Collaboration and teamwork	Career literacy
Inquiry and analysis	Adaptability and flexibility	Communication	Grit and resilience
Risk taking	Personal awareness	Global and cultural awareness	Work ethic; dependable and reliable
	Learn independently	Ethics and integrity	Self-advocacy
	Perseverance		



### PUTTING POLICY INTO PRACTICE IN THE COLORADO TALENT DEVELOPMENT SYSTEM

Colorado has adopted a number of progressive strategies in recent years to anticipate and address the workforce demands of our state's economy. Initiatives such as the Colorado Blueprint have helped prioritize the direction of our state's economic development, while cross-agency collaboration and the Sector Strategies framework have contributed to progress in developing partnerships and career pathways that support the development of talent to better align with key industry demand. During the 2015 legislative session a number of workforce-related bills were also passed, further supporting the path Colorado has been traveling to foster talent development. Alignment between strategies will be crucial in order to ensure our efficacy. This section discusses how Colorado is poised to implement the federal Workforce Innovation and Opportunity Act, how Colorado is employing a number of innovative talent development strategies, and how recent legislation and initiatives link to the first annual Talent Pipeline Report's recommendations.

#### *Implementing the Workforce Innovation and Opportunity Act (WIOA) in Colorado*

From a national perspective, the Workforce Innovation and Opportunity Act of 2014 (WIOA) continues to be galvanizing legislation for our work. In many ways, the act affirms the direction that our talent development system has been moving over the last several years and incorporates several of our standard practices into the regular course of business for workforce centers and other public and private programs that have sustainable employment as a long-term objective. Specifically, the act calls for sector partnerships and industry-driven career pathways, and creates measurements for how effectively the system is meeting the needs of businesses.

WIOA also emphasizes that the public talent development system is open to and ready to serve all types of individuals, regardless of education-, skill-, or income-level, as well as any level of ability or disability. Effectively implementing these components of the law in Colorado requires first acknowledging the variety of paths that can lead to the middle-class, and, second, developing the support systems and processes to serve individuals at any point.

For more information on the Colorado Blueprint and Colorado's Key Industries, visit the Office of Economic Development and International Trade at [www.advancecolorado.com](http://www.advancecolorado.com)

The WIOA implementation process is working to align programs across state and local agencies, while also scaling the practices that have produced results in specific geographic areas or within target populations. The data we have informs the creation of career pathways and provides areas of focus for our work moving forward. To fully realize the purposes of WIOA in Colorado—which include increasing employment retention, increasing wages and reducing the need for public assistance—we know that we must create the trail guide for citizens to follow, align the work of all education, training, and economic development activities in the state, and ultimately get this information into the hands of individuals so they can take charge of their careers. Using this

report and related data sources, we will craft a new four-year vision for activities in the state that will increase the opportunities for all Coloradans to obtain the education and training they need for the jobs of the future. This state plan will be released March of 2016.

#### *Innovative Initiatives and Partnerships*

Colorado is involved in a number of innovative solutions and partnerships with an eye to developing talent to align with business' needs and supporting a healthy Colorado economy. This section provides overviews of a selection of exciting initiatives.

**Rework America Connected—Colorado:** Colorado is the first state to partner with the Markle Foundation to build Rework America Connected, an innovative effort supported by LinkedIn to increase the connections and tools Coloradans need to get ahead. This initiative will employ new technologies and training to create a skills-based marketplace that helps employers find the workforce they need, and allows job seekers to get the skills for growing occupations rapidly and affordably.

Rework America Connected will work with employers to post jobs by skills, rather than defaulting to degrees, so more people can qualify for them, including those with some postsecondary training, but not a college degree. Job seekers will be able to identify the skills needed for a job, along with the training available, to obtain the skills they lack, and then get connected with the best job for them. Ultimately, by building upon Colorado's



existing infrastructure, the initiative will create a network that connects adults to middle skill career and education opportunities, and connects employers to a more qualified workforce to grow their businesses. At the same time we are shrinking the middle skills gap for our workers to help Colorado create a dynamic, skills-based marketplace to continue to grow our state's economy and give more Coloradans access to the middle class.

**Business Experiential Learning Commission (BEL Commission) and Business and Schools in Collaboration (BASIC):** Although much of Colorado has recovered from the recession, many individuals continue to be unemployed or underemployed, while at the same time businesses are struggling to find the skilled workforce they need, especially in occupations that require a combination of education and on-the-job training. Colorado is addressing this issue through the BEL Commission, created by the Executive Order of Governor Hickenlooper. This business-led commission, in partnership with public and non-profit entities, is to develop a systemic approach to business involvement in P-20 education and training to meet the needs of Colorado's economy. The BEL Commission will work with the CWDC to leverage the strength of Colorado's public-private partnerships and existing efforts to address this challenge.

The BEL Commission will ensure the implementation of BASIC, which will work to expand work-based learning experiences for students at all levels. These experiences will range from career exposure to creation of integrated apprenticeships, where theory

is taught in the classroom and application is taught through work experience with the guiding expertise of a skilled expert, and will be available in a variety of industries, including but not limited to, manufacturing, information technology, banking and finance, as well as skilled trades. Technology will be used to provide a forum for students, interns, apprentices and workers to document skills they have obtained in the workplace and digitally share that information with educators and employers, and to create a portal of information to connect students, job seekers, schools, employers and civic agencies to experiential learning and training opportunities and careers that require them.

**Lockheed Martin-Blackfox Initiative:** While veterans receive extensive training toward military occupations, not all veterans had military jobs that readily translate to civilian occupations or want to continue doing the same type of work. To address the needs of these veterans, CDLE has created innovative programs to help veterans obtain specialized training and industry-recognized credentials that will lead them to good jobs in growth industries. Examples include the Lockheed Martin-Blackfox Initiative to train veterans for positions in advanced electronics manufacturing, and a new work-based training program that provides veterans an opportunity to "learn and earn" through apprenticeships and on-the-job training. As of September 2015, the Lockheed Martin-Blackfox partnership has placed 66 veterans, including 28 disabled veterans, and seven non-veterans with salaries ranging from \$16 to \$27 per hour with a 93 percent retention rate.

Check out the Colorado Innovation Network's [2015 Innovation Report](#), featuring interviews with leaders in industry, higher education and workforce development, and their perspectives on the trends shaping the future workforce in Colorado.

**ASPIRE Research Consortium:** The Department of Vocational Rehabilitation is part of a six state research consortium called ASPIRE. This group is piloting innovative solutions and gathering data to analyze the evidence-based practices that increase employment outcomes for young people between the ages of 14 to 16 over a period of five years. Colorado has recruited 4,00 young people receiving Supplemental Security Income (SSI) for this initiative: half of those participating in the project will receive the standard resources available in the community, while the rest will receive targeted interventions including help navigating school options, information and education about career choices, coaching and money managing learning opportunities, training and support for parents, focus on self-determination, and one paid employment experience. WIOA increases the emphasis on working effectively with youth at a younger age to support employment outcomes. Colorado is well positioned to make progress meeting this expectation because of initiatives like SWAP and ASPIRE.

### *Approaches to Industry-led Talent Solutions: Measuring Sector Strategies*

Colorado has garnered national attention through its implementation of sector strategies as a vehicle for alignment across workforce, education and economic development with industry. As a result of the passage of WIOA, the federal government is requiring states to develop and implement sector initiatives for in-demand industries, and is requiring state and local workforce boards to lead the development of career pathways. As a state we are well-positioned to fulfill these obligations, as we currently have eight active sector partnerships, twelve confirmed emerging partnerships, and a number of partnerships in the early phases of exploration.

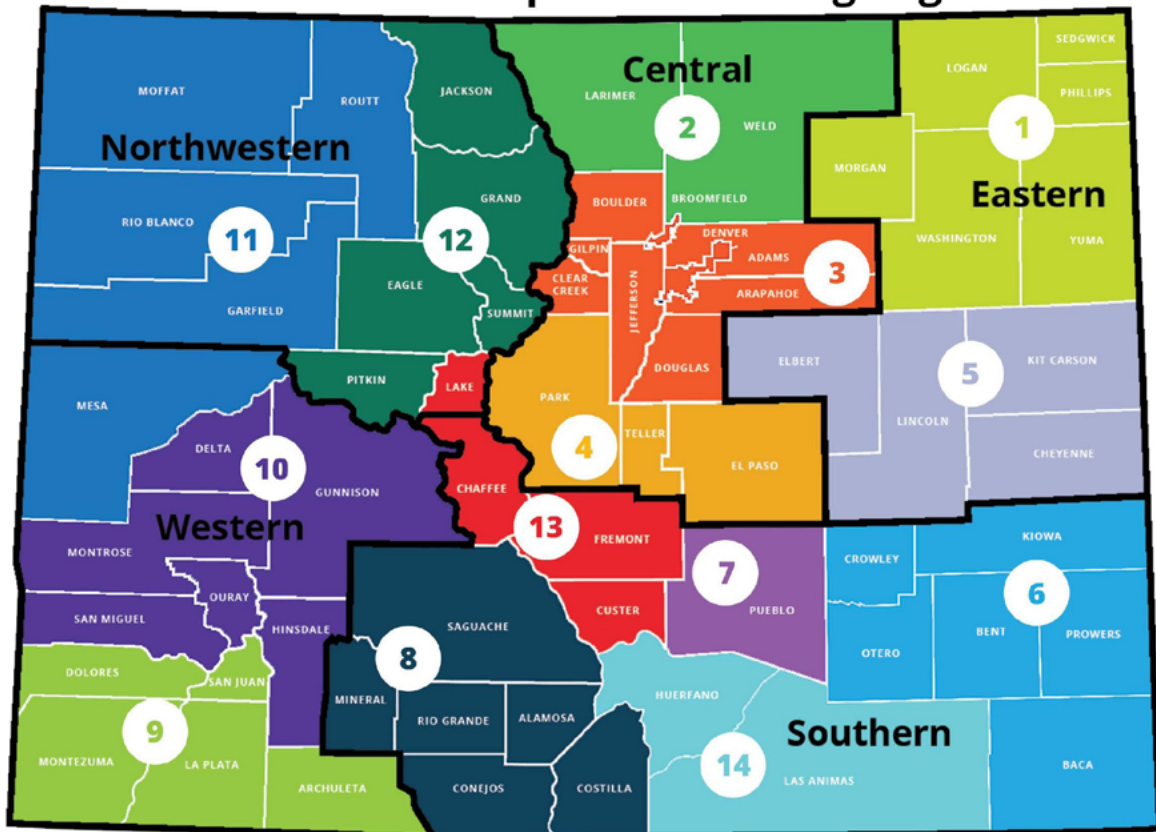
Recognizing it is critical to measure the impact sector partnerships are having on industry, regional economies and worker employability, the Colorado Workforce Development Council recently piloted a set of key performance indicators to assess the progress and outcomes of sector partnerships in Colorado. This year's survey will help establish a baseline of activity, and we look forward to future results to help further demonstrate progress, successes and challenges, as we look to build and improve our systems through sector partnerships. The following map shows Colorado's active, emerging and exploring sector partnerships by region and industry.

### **SECTOR PARTNERSHIPS KEY PERFORMANCE INDICATOR SURVEY**

An annual survey to monitor the impact of sector partnerships was piloted during the summer of 2015. Survey questions were designed to lend insight to the impact these partnerships are having on the involved employers, what sort of education/training opportunities are being developed as a result of a partnership's synergy, and to better understand the successful key activities and services being propelled by the partnerships.

A **sector partnership** is an industry-specific regional partnership led by business, in collaboration with economic development, education and workforce development.

## Colorado's Sector Partnerships & Workforce Development Planning Regions



- |   |   |  |
|---|---|--|
| <b>1</b> Exploring: Energy & Natural Resources  | <b>6</b> Active: Advanced Manufacturing<br>Exploring: Health & Wellness | <b>11</b> Emerging: Health & Wellness (Mesa, Delta, Montrose Counties)<br>Emerging: Health & Wellness (Garfield, Rio Blanco, Routt Counties)<br>Emerging: Advanced Manufacturing (Mesa County) |
| <b>2</b> Active: Health & Wellness<br>Active: Advanced Manufacturing<br>Exploring: Energy & Natural Resources   | <b>7</b> Active: Advanced Manufacturing<br>Active: Health & Wellness    | <b>12</b> Emerging: Health & Wellness  |
| <b>3</b> Active: Health & Wellness<br>Active: Advanced Manufacturing<br>Emerging: Landscape Architecture<br>Emerging: Technology & Information<br>Exploring: Construction & Development | <b>8</b> Exploring: Health & Wellness                                   | <b>13</b> Active: Health & Wellness<br>Emerging: Tourism & Outdoor Recreation  |
| <b>4</b> Emerging: Advanced Manufacturing<br>Emerging: Health & Wellness  | <b>9</b> Emerging: Energy & Natural Resources                           | <b>14</b> Exploring: Health & Wellness   |
| <b>5</b> Emerging: Health & Wellness  | <b>10</b> Emerging: Health & Wellness                                   |  |

*\*Regions 1-14 are "Blueprint Regions" designated by the Colorado Office of Economic Development & International Trade. Regions outlined in black are "Workforce Development Planning Regions" designated by the Workforce Innovation & Opportunity Act.*

## WHAT DOES A SECTOR PARTNERSHIP LOOK LIKE IN COLORADO?

Each sector partnership is highly unique by design, depending on their region and industry. However, many commonalities exist across partnerships.

The number of industry partners ranges from five to 80, depending on the region and industry. The level of participation varies across employers and partners. Industry participation at meetings and in partnership initiatives is a crucial aspect of driving the impact of a partnership.

Non-business partners in a sector partnership range from seven to 25 members, though most partnerships have seven to 12 active non-employer partners. The partnership serves as a single table at which businesses from one industry engage with a diverse set of public partners. All Colorado sector partnerships have relationships with their regional workforce center, local community or technical college, as well as local four-year university if there is one in their region. Other strategic partners include entities like local school districts, state agencies, local government councils, local chambers of commerce and small business organizations.

## WHAT DO INDUSTRY-DEFINED PRIORITY AREAS LOOK LIKE IN A SECTOR PARTNERSHIP?

Sector partnerships focus on a variety of industry-defined priorities such as networking, supply chains and policy. But, common to all sector partnership across the state is a focus on talent development,

education, recruitment and retention efforts. Common themes and examples of talent development priorities follow. A number of sector partnerships are focused on exposing youth to industry jobs and career pathways.

### Youth-oriented Initiatives

● The Denver metro area IT sector partnership is collaborating with Denver Public Schools to design and pilot technology pathways and curriculum. This includes supporting activities such as job shadowing, mentoring and apprenticeships. Among other initiatives this partnership has launched includes a new "Intern Accelerator" program, with an initial cohort of 22 interns working across eight different tech companies.

● The Northern Colorado (NoCO) Manufacturing Partnership's Manufacturing Rocks Committee has collaborated with six high schools and one middle school across three Districts to engage 348 students in learning experiences in 22 local manufacturing facilities. Together, the partnership has developed a curriculum for educational experiences in manufacturing facilities and the manufacturers themselves have helped fund the program.

● The Pikes Peak Manufacturing Sector Partnership business leaders partnered with STEM coordinators in local high schools to provide mentoring and advisory support. Together, the partnership has launched two successful youth engagement initiatives with the high schools: the "Packaging Challenge" and "Cardboard Challenge," resulting in exposure and awareness of the industry and skill development.

### Career Pathways

A **CAREER PATHWAY** is a series of connected education and training programs, work experiences, and student support services that enable individuals to secure a job or advance in a demand industry or occupation.

Several partnerships have prioritized the need to understand critical occupations within the industry and how career movement occurs within the industry, in order to align education and training with the needs of industry and fill their talent pipeline. As a result, the Colorado Workforce Development Council developed the **Creating Career Pathways in Colorado: A Step-by-Step Guide** as a framework for the development of career pathways at the local level.

● Over the last year, the NoCO Manufacturing Partnership has built a regional career pathway action plan, identifying their top critical occupations, the knowledge, skills and abilities (KSAs) needed for each occupation, existing education programs, as well as gaps and appropriate interventions. The Colorado Career Pathway Step-by-Step Guide emphasizes critical occupations and processes that illuminate, prioritize, and contextualize needed KSAs so that education and training partners have actionable information.

To further understand the outcomes and review a full report on occupations, KSAs, and career trajectories, please view the full NoCO Manufacturing Partnership Career Pathway Action Plan at [www.SectorsSummit.com](http://www.SectorsSummit.com)



To address the priority gaps identified by regional employers, the team is currently developing and implementing actions that include increasing the capacity of firms and training institutions to offer work-based experiences, strengthening the in-take and facilities capacity and connections of education and training providers, and making priority curriculum changes at regional educational institutions.

● The Greater Metro Denver Healthcare Sector Partnership has been bridging education to employment through collaboration and cooperation between employers in healthcare, public and private educational institutions, economic development agencies, and four workforce centers. The partnership boasts targeted workgroups focused on critical occupations. Each workgroup has identified the issues and challenges, skills gaps and training needs of recruiting additional candidates. Critical occupations and workgroups include: medical assistants, pharmacy technicians, surgical technicians, medical lab technicians, medical assistants, and operating room. In the spring of 2015, the Partnership enrolled 10 students in Metro State’s Perioperative Nursing program and six have already entered employment. In the fall of 2015, 24 students enrolled in Metro State’s Medical Laboratory Scientists program.

## HOW ARE BUSINESSES BENEFITING FROM SECTOR PARTNERSHIPS?

Businesses involved in sector partnerships find value in their participation and stay engaged for a variety of reasons. The partnerships create highly customized

responses to industry needs, focus on opportunities facing the industry, and provide a setting to engage with public partners. Colorado businesses cite a number of benefits, often reporting that company-to-company interactions have resulted in new markets and products, and stronger relationships have been forged with local educational entities. Some businesses have already seen reductions in vacancy rates, employee recruitment costs and employee turnover as a result of their partnership. Others have reported that their company has added or created new jobs because of ideas, products, markets or contacts that have resulted from interactions with other companies from their sector partnership. One company reported that three new jobs have resulted in the past 12 months. But, for the majority of sector partnerships it is still too early to provide reliable quantitative results. Over two-thirds of active or emerging sector partnerships have contributed to participating businesses improving internal operations practices or policies. These include changes to internal training, recruitment practices and human resource practices.

Yvonne Meyers, Health Systems Director for Columbine Health Systems and business champion for the Northern Colorado Healthcare Partnership explains that the sector partnership is, “the single way that I’ve been able to come together with my competition to identify, to work on what are those similarities, where is that nexus where we have an economic opportunity that we can’t fix by ourselves, but we can as a sector group.”

Another respondent notes, “I have been part of many organized manufacturing groups/initiatives and the NoCO Manufacturing Partnership has by far been the most successful with sustainability and growth.”

## HOW ARE WORKERS BENEFITING FROM SECTOR PARTNERSHIPS?

Eight sector partnerships have developed new training and/or education programs over the past year, aside from a number of sector partnerships that have made improvements to existing programs or are still in the process of developing programs. For example, through the Pikes Peak Manufacturing Sector Partnership, a partnership between Pikes Peak Community College (PPCC) and Springs Fabrication has led to a welding training program. The actual training is being done in a special facility inside Springs Fab that both Springs Fab employees and PPCC students can use.

Intensive “fast-track” courses are also being developed in various regions to train workers for immediate industry needs. For example, the Upper Arkansas Regional Health and Wellness Sector Partnership’s regional workforce center and Pueblo Community College have collaborated to develop a fast-track certified nurse aide (CNA) training program. Other such fast-track trainings are currently under discussion in that partnership. The Mesa County Manufacturing Partnership has also recently developed two fast-track courses to train workers in alignment with the immediate needs of local manufacturers. In the spring of 2015, over a dozen people participated in these courses.

### *Selected Updates on the First Annual Talent Pipeline Report Recommendations*

In preparing the first Talent Pipeline Report, the agencies identified areas in which they jointly recommended further exploration. This section highlights examples of current activity related to these recommendations. The 2014 and 2015 legislative sessions, as well as aligned resources across agencies, have allowed for much of this work to continue. For the complete list of updates, please refer to Appendix B.

**Recommendation:** Multiple transition points in the talent pipeline lack continuity of data that will allow tracking and reporting on the current and future state of Colorado's Talent Pipeline (such as the ability to identify how many students directly enter the workforce following high school). Develop policies and mechanisms to collect and use data in a way that provides critical information needed for better decision making while committing to the strongest possible standards of data privacy and protection of personal information.

#### **Updates:**

- The Department of Higher Education's goal to close the attainment gap (which is shared among all agencies within the Governor's Workforce Cabinet), has strengthened cross-agency data sharing, which has improved reporting.
- The key performance indicators from career pathways and sector partnerships have been developed and will help measure the effectiveness of these strategies.
- However, the coalition is still lacking valuable data points due to the lack of data available from the Department of Education.

**Recommendation:** The skills outlined by industry, workforce, education, higher education, and economic development are similar. An alignment of skills terms and definitions would more clearly communicate the intersections and expectations for successful employment in Colorado.

#### **Updates:**

- HB 15-1170 creates the position of a statewide postsecondary and workforce readiness (PWR) coordinator to work with key partners to raise the level of postsecondary attainment by Coloradans. It adds a new CDE performance measure based on the percentage of high school graduates who enroll in postsecondary education immediately following high school.
- Colorado has made progress in updating the definition of PWR to capture and align Colorado's PWR definition with these primary skills. The Departments of Education and Higher Education are leading this effort and have held several stakeholder sessions regarding this conversation. HB 15-1170 will provide critical assistance and support for implementation of the updated definition.
- The work of the Colorado STEM Roadmap committees and board are ensuring that STEM-based competencies across many jobs in today's economy integrate these into educational pathways. The support provided for P-TECH through HB 15-1270 reinforces this alignment and connection between schools, industry and higher education training.
- Offered by many workforce centers in Colorado, ACT WorkKeys assessments in Applied Mathematics, Locating Information, and Reading for Information can lead to earning the CareerReady Colorado Certificate.

**Recommendation:** Continue to utilize the career pathways model to align education, training and work-based learning so students and potential employees have a clear picture of what education and experience is necessary and the steps to pursue a specific career for top jobs.

#### **Updates:**

- Colorado's work is moving forward with great momentum from support provided through SB 14-205, along with HB 15-1170 and HB 15-1270, as discussed above, and HB 15-1274 and HB 15-1275.
- HB 15-1274, Career Paths in Growing Industries, provides support for the creation of new career pathways for students in critical occupations in growing industries.
- Efforts in this area are demonstrated through the continued support and development of sector partnerships and career pathways, some of which are highlighted in the previous section.
- HB 15-1275 allows coursework related to apprenticeship and internship programs to be counted in concurrent enrollment programs. CDE and CDHE are leading discussions with the Concurrent Enrollment Advisory Board for internships/apprenticeships recommendations by January 2016.
- Colorado has utilized the infrastructure put in place by 2014 legislation to continue this work by utilizing concurrent enrollment (CE) to carry out the alignment between K-12 education and Career and Technical Education. SB 15-138 also funds ASCENT.



SB 15-290, Student Leaders Institute, establishes a competitive residential summer academic program for students entering 10th and 11th grades.

SB 15-082, County-Based Incentives Program, allows counties to establish local workforce development funds to provide tuition assistance to high school graduates who wish to pursue postsecondary education or training and is providing valuable resources for local communities to invest in their local talent pipeline.

**Recommendation:** Create a collaborative structure to support and incentivize career exposure and work-based learning, such as job shadowing, internships, on-the-job training and apprenticeship, throughout the talent development system, simplifying access for individuals and employers.

**Updates:**

Through multiple efforts, including supportive 2014 and 2015 legislation outlined above, Colorado has moved forward in this work. The creation of the BEL Commission and adoption of BASIC creates the collaborative structure to move this effort forward; more information on these efforts is included in this report.

HB15-1230, Innovative Industries Workforce Program, provided support for creating a common collaborative structure for paid internships.

Partner agencies are developing and identifying areas of opportunity for apprenticeships/internships, developing a set of templates for industry and/or programs to create customized toolkits, and working to highlight best practices.

CDE is working to spotlight and support K-12 districts that have robust industry certificate components as part of their new Graduation Guidelines policies.

**Recommendation:** Work with industry to create marketing and outreach campaigns so Coloradans have a better understanding and appreciation of good careers and the multiple pathways into them.

**Updates:**

Through its Advocacy Committee, the CWDC is leading a collaborative effort to create a marketing and communication plan and strategy for Colorado's Talent Development Network. This work will reflect the connections between education, postsecondary education and training, workforce development, and economic development in ensuring that every Coloradan has access to education and training needed to obtain meaningful employment and that every Colorado business has access to the skilled workforce they need to thrive and grow in Colorado.

HB 15-1276, the WORK Act, provides support for marketing efforts for individual training programs by creating the Skilled Worker Outreach, Recruitment, and Key Training Grant Program.

**Recommendation:** Develop policies that support expansion of services to underserved populations to ensure access to educational and career pathways to employment (e.g., underserved minorities, veterans, youth, long-term unemployed, ex-offenders).

**Updates:**

The Workforce Innovation and Opportunity Act (WIOA) specifically focuses on aligning services to better serve populations with multiple barriers to employment.

The Division of Vocational Rehabilitation is working in partnership with the Department of Labor and Employment to better align employment services.

The Department of Higher Education, along with support from partner agencies, is focusing its resources on closing Colorado's attainment gap by at least half by 2025, through engaging external stakeholders in a collective impact strategy around solutions to close the gap. DHE led the development of the Colorado Opportunity Scholarship Initiative, which has committed \$6.8m in two-year grants to public and non-profit entities focused on wraparound support services to increase persistence and completion rates among underserved students.

HB 15-1030, Employment Services for Veterans Pilot Program, requires CDLE to administer an employment services for veterans pilot program.

As discussed in above updates, many pieces of recent legislation are providing support for career pathway development, all of which will provide additional support for serving special populations.



## SECOND ANNUAL TALENT PIPELINE REPORT FINAL RECOMMENDATIONS

In preparing the second annual Talent Pipeline Report, the agencies identified areas in which they jointly recommend further exploration. The CWDC will continue to coordinate the collaboration between CDE, CDHE, CDLE, and OEDIT, as well as other agencies and system partners, to ensure that these recommendations are addressed over the next several years as resources are available. Much of this work has started and agencies will continue to work toward the recommendations outlined below, using existing policy and initiatives whenever possible. Our hope is that future resources can be targeted toward these priority areas, expanding our understanding of the needs of employers, students and job seekers, and the state's and system partners' ability to meet them.

### *Priority: Close the Attainment Gap*

- Overcome barriers to expanding concurrent enrollment and embed concurrent enrollment as a critical career pathways tool to align education, training and work-based learning, so students and potential employees have a clear picture of what education and experience is necessary to pursue a specific career.
- Research policy and statutory barriers or perceived barriers to work-based learning, and provide resources and incentives to elevate and accelerate coordinated initiatives for the development of experiential learning partnerships between business and providers. As a result of supportive 2014 and 2015 legislation, Colorado has moved forward with multiple efforts in support of career

exposure and work-based learning throughout the talent development system, including job shadowing, internships, concurrent enrollment opportunities, on-the-job training and apprenticeship. The creation of the Business Experiential Learning Commission and adoption of BASIC, along with recommendations from the Concurrent Enrollment Advisory Board, create the collaborative structure to move this effort forward.

- Develop policies that support expansion of services to underserved populations to ensure access to career pathways to employment (e.g., underserved minorities, veterans, youth, long-term unemployed, ex-offenders, persons with special needs and disabilities), including education, training, work exposure and experience, as well as wraparound services needed for success.
- Develop policies and initiatives to re-engage adults in educational settings so that they can acquire the skills and credentials necessary to enter and to participate more fully in the workforce. Colorado will never close the attainment gap or the middle skills gap if we solely focus on individuals currently in our education systems. Adults who are underemployed due to a lack of appropriate skills must be re-engaged in rapid attainment skills that are critical for Colorado's industries to grow.
- Promote Postsecondary and Workforce Readiness Competencies through continued support for graduation guidelines, continued support for implementation of PWR definition across K-12 and postsecondary sectors, as well as other innovative pilots connecting these competencies to school and district accountability.

### *Priority: Align Resources and Provide Access to Information*

Under existing legislative authority, continue and expand the work of sector partnerships to cover more industries and geographic areas of the state, resulting in a common set of skills definitions statewide. The work of sector partnerships and the skills panel process are connecting education, higher education, workforce, economic development and business with an alignment of skills terms and definitions to more clearly communicate the intersections and expectations for successful employment in Colorado.

Allow funds provided through previous legislation, HB 15-1276, to be used for statewide awareness of and access to concurrent enrollment and work-based learning opportunities that will allow students to engage in career exploration. HB 15-1276 created the Skilled Worker Outreach, Recruitment, and Key Training Grant program, requiring matching dollars, but limiting grant funds, to outreach and recruitment of students in training programs. The most effective way to encourage students to consider careers is to give them an opportunity to explore that career through classroom and applied training opportunities. By extending the use of grant dollars to provide funding for concurrent enrollment and work-based learning costs, as well as to allow for statewide awareness of the quality and value of skilled worker occupations, we believe the funds will be invested more effectively and responsibly.

Policies and mechanisms should be developed to collect and to use data in a way that provides critical information needed for better decision-making. This is done with a commitment to the strongest possible standards of data privacy and protection of personal information.

Although the coalition has continued to strengthen cross-agency data sharing, which has improved reporting capabilities, multiple transition points in the talent pipeline lack continuity of data. This hinders our ability to analyze aggregate trends and report on the current and future state of Colorado's Talent Pipeline (such as the ability to identify how many students directly enter the workforce following high school).

### *Priority: Increase Job Placement, Retention and Wage Growth*

Repeal and replace the existing Colorado Work Force Act, C.R.S. 8-83-201 to 8-83-206, amend other pieces of state legislation that govern partner programs required by WIOA, and build upon the success of current workforce system initiatives and promising practices in use throughout the state, as recommended by the statewide taskforce on new CO-WIOA legislation. With the implementation of WIOA, existing Colorado law must be updated to comport with the federal act and to create the best opportunities to build a world class talent development system.

Support streamlined regulations of credentialing to result in a more rapid response to filling high demand occupations.

Research best practices in local recruiting, training and retaining healthcare workers and teachers in rural areas of the state.

Lastly, continue to support the alignment work between state agencies that occurred in the preparation and development of this report as facilitated by the CWDC, so as to best coordinate efforts for the development of Colorado's talent pipeline.

## APPENDIX A: COMPLETE LIST OF TOP JOBS

This list was created using Colorado LMI ten year (2014 to 2024) projections for the state. Occupations made this list by having a median wage at or above a sustainable living wage (\$21.18 an hour) for a family of three with one working adult in Colorado (per [livingwage.mit.edu](http://livingwage.mit.edu)), above average projected growth for all occupations from 2014 to 2024 (at the time of this report, 24.4 percent), and at or above 40 annual average openings.

Occupation Code	Occupation	Median Annual Wage	2014-2024 Percent Change	Total Annual Avg. Openings	Typical Entry Education Level	Additional Training Level
11-1021	General and Operations Managers	\$100,247	25.2	1809	Bachelor's degree	None
11-2021	Marketing Managers	\$133,308	25	127	Bachelor's degree	None
11-3021	Computer and Information Systems Managers	\$140,037	26.6	253	Bachelor's degree	None
11-3121	Human Resources Managers	\$122,692	30.4	84	Bachelor's degree	None
11-9021	Construction Managers	\$83,436	28.1	572	Bachelor's degree	Moderate-term on-the-job training
11-9033	Education Administrators, Postsecondary	\$77,162	27	133	Master's degree	None
11-9111	Medical and Health Services Managers	\$101,250	34.3	241	Bachelor's degree	None
11-9141	Property, Real Estate, and Community Association Managers	\$64,938	25.9	194	High school diploma or equivalent	None
11-9151	Social and Community Service Managers	\$68,578	26.8	85	Bachelor's degree	None
13-1051	Cost Estimators	\$60,095	43.4	419	Bachelor's degree	None
13-1081	Logisticians	\$74,114	43.1	161	Bachelor's degree	None
13-1111	Management Analysts	\$80,445	33.4	509	Bachelor's degree	None
13-1151	Training and Development Specialists	\$61,866	26.5	230	Bachelor's degree	None
13-1161	Market Research Analysts and Marketing Specialists	\$66,975	46.3	818	Bachelor's degree	None
13-2011	Accountants and Auditors	\$67,473	27	2044	Bachelor's degree	None
13-2051	Financial Analysts	\$74,924	36.9	231	Bachelor's degree	None
13-2052	Personal Financial Advisors	\$76,751	41.5	268	Bachelor's degree	None
15-1121	Computer Systems Analysts	\$86,663	37.3	552	Bachelor's degree	None
15-1122	Information Security Analysts	\$92,559	53.1	104	Bachelor's degree	None
15-1132	Software Developers, Applications	\$98,909	34.9	1109	Bachelor's degree	None



Occupation Code	Occupation	Median Annual Wage	2014-2024 Percent Change	Total Annual Avg. Openings	Typical Entry Education Level	Additional Training Level
15-1133	Software Developers, Systems Software	\$104,685	39.1	605	Bachelor's degree	None
15-1134	Web Developers	\$55,227	38	212	Associate degree	None
15-1141	Database Administrators	\$96,561	28.9	127	Bachelor's degree	None
15-1143	Computer Network Architects	\$101,632	26.5	185	Bachelor's degree	None
15-1151	Computer User Support Specialists	\$50,910	34.6	695	Some college, no degree	Moderate-term on-the-job training
15-2031	Operations Research Analysts	\$80,252	41.3	56	Bachelor's degree	None
17-1011	Architects, Except Landscape and Naval	\$70,533	31.3	197	Bachelor's degree	Internship/residency
17-2011	Aerospace Engineers	\$118,977	36.8	147	Bachelor's degree	None
17-2051	Civil Engineers	\$79,764	32.5	418	Bachelor's degree	None
17-2061	Computer Hardware Engineers	\$107,450	25.5	186	Bachelor's degree	None
17-2071	Electrical Engineers	\$93,307	25.6	184	Bachelor's degree	None
17-2081	Environmental Engineers	\$84,033	36.5	130	Bachelor's degree	None
17-2112	Industrial Engineers	\$88,025	24.5	151	Bachelor's degree	None
17-2171	Petroleum Engineers	\$134,949	41.7	132	Bachelor's degree	None
19-2021	Atmospheric and Space Scientists	\$92,177	30.8	97	Bachelor's degree	None
19-2041	Environmental Scientists and Specialists, Including Health	\$74,018	27.5	179	Bachelor's degree	None
19-2042	Geoscientists, Except Hydrologists and Geographers	\$100,521	34.2	175	Bachelor's degree	None
19-4041	Geological and Petroleum Technicians	\$58,105	34.3	47	Associate degree	Moderate-term on-the-job training
21-1022	Healthcare Social Workers	\$52,132	36.5	125	Master's degree	None
21-1091	Health Educators	\$51,457	31.3	41	Bachelor's degree	None
23-2011	Paralegals and Legal Assistants	\$49,202	31.2	269	Associate degree	None
25-1011	Business Teachers, Postsecondary	\$72,178	26.9	67	Doctoral or professional degree	None
25-1042	Biological Science Teachers, Postsecondary	\$55,623	31.4	44	Doctoral or professional degree	None
25-1071	Health Specialties Teachers, Postsecondary	\$102,273	51	269	Doctoral or professional degree	None
25-1072	Nursing Instructors and Teachers, Postsecondary	\$61,391	50.2	86	Master's degree	None

## APPENDIX A: COMPLETE LIST OF TOP JOBS

Occupation Code	Occupation	Median Annual Wage	2014-2024 Percent Change	Total Annual Avg. Openings	Typical Entry Education Level	Additional Training Level
25-1081	Education Teachers, Postsecondary	\$51,880	26.9	51	Doctoral or professional degree	None
25-1121	Art, Drama, and Music Teachers, Postsecondary	\$51,005	28.3	107	Master's degree	None
27-1025	Interior Designers	\$46,373	26.9	85	Bachelor's degree	None
27-3042	Technical Writers	\$65,703	26.3	83	Bachelor's degree	Short-term on-the-job training
27-3091	Interpreters and Translators	\$48,108	67.7	117	Bachelor's degree	Short-term on-the-job training
29-1031	Dietitians and Nutritionists	\$56,997	30.5	44	Bachelor's degree	Internship/residency
29-1041	Optometrists	\$106,802	31.1	50	Doctoral or professional degree	None
29-1051	Pharmacists	\$121,108	28.5	257	Doctoral or professional degree	None
29-1067	Surgeons	\$192,958	30.6	67	Doctoral or professional degree	Internship/residency
29-1069	Physicians and Surgeons, All Other	\$192,942	24.5	131	Doctoral or professional degree	Internship/residency
29-1071	Physician Assistants	\$92,160	50.5	145	Master's degree	None
29-1122	Occupational Therapists	\$80,850	36.6	141	Master's degree	None
29-1123	Physical Therapists	\$74,520	45.9	324	Doctoral or professional degree	None
29-1126	Respiratory Therapists	\$57,724	32.9	84	Associate degree	None
29-1131	Veterinarians	\$77,789	24.9	135	Doctoral or professional degree	None
29-1141	Registered Nurses	\$68,295	33	2351	Associate degree	None
29-1171	Nurse Practitioners	\$97,940	42.7	130	Master's degree	None
29-1199	Health Diagnosing and Treating Practitioners, All Other	\$44,652	36.5	69	Master's degree	None
29-2011	Medical and Clinical Laboratory Technologists	\$62,126	26.1	131	Bachelor's degree	None
29-2021	Dental Hygienists	\$81,091	37.6	254	Associate degree	None
29-2032	Diagnostic Medical Sonographers	\$77,684	60.8	60	Associate degree	None
29-2034	Radiologic Technologists and Technicians	\$58,986	32.7	139	Associate degree	None
29-2055	Surgical Technologists	\$50,274	45	82	Postsecondary non-degree award	None
29-2061	Licensed Practical and Licensed Vocational Nurses	\$45,843	31.4	315	Postsecondary non-degree award	None



Occupation Code	Occupation	Median Annual Wage	2014-2024 Percent Change	Total Annual Avg. Openings	Typical Entry Education Level	Additional Training Level
31-2021	Physical Therapist Assistants	\$50,203	46	68	Associate degree	None
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundsk	\$48,403	25.2	174	High school diploma or equivalent	None
41-3099	Sales Representatives, Services, All Other	\$51,915	27.3	1219	High school diploma or equivalent	Short-term on-the-job training
41-9021	Real Estate Brokers	\$63,430	25	94	High school diploma or equivalent	None
47-1011	First-Line Supervisors of Construction Trades and Extraction Work	\$62,668	38.4	721	High school diploma or equivalent	None
47-2021	Brickmasons and Blockmasons	\$44,582	64.2	123	High school diploma or equivalent	Apprenticeship
47-2111	Electricians	\$46,847	45.4	1006	High school diploma or equivalent	Apprenticeship
47-2152	Plumbers, Pipefitters, and Steamfitters	\$46,143	45	536	High school diploma or equivalent	Apprenticeship
47-5012	Rotary Drill Operators, Oil and Gas	\$51,702	26.7	53	Less than high school	Moderate-term on-the-job training
47-5013	Service Unit Operators, Oil, Gas, and Mining	\$44,897	29.3	310	Less than high school	Moderate-term on-the-job training
47-5021	Earth Drillers, Except Oil and Gas	\$45,240	43.8	48	High school diploma or equivalent	Moderate-term on-the-job training
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$47,625	26.8	163	High school diploma or equivalent	Long-term on-the-job training
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$48,760	43.5	341	Postsecondary non-degree award	Long-term on-the-job training
49-9041	Industrial Machinery Mechanics	\$52,710	39.1	415	High school diploma or equivalent	Long-term on-the-job training
49-9062	Medical Equipment Repairers	\$48,736	42.4	85	Associate degree	Moderate-term on-the-job training
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	\$46,792	25.5	61	High school diploma or equivalent	Moderate-term on-the-job training
53-7021	Crane and Tower Operators	\$48,641	42.4	42	High school diploma or equivalent	Moderate-term on-the-job training
53-7073	Wellhead Pumpers	\$55,006	27.7	55	Less than high school	Moderate-term on-the-job training

## APPENDIX B: UPDATES ON THE FIRST ANNUAL TALENT PIPELINE REPORT RECOMMENDATIONS

In preparing the first Talent Pipeline Report, the agencies identified areas in which they jointly recommended further exploration. This section addresses current activity related to these recommendations. The 2014 and 2015 legislative sessions, as well as aligned resources across agencies, have allowed for much of this work to continue.

**Recommendation:** Multiple transition points in the talent pipeline lack continuity of data that will allow tracking and reporting on the current and future state of Colorado's Talent Pipeline (such as the ability to identify how many students directly enter the workforce following high school). Develop policies and mechanisms to collect and use data in a way that provides critical information needed for better decision making while committing to the strongest possible standards of data privacy and protection of personal information.

### Updates:

- The Department of Higher Education's goal to close the attainment gap (which is shared among all agencies within the Governor's Workforce Cabinet), has strengthened cross-agency data sharing, which has improved reporting.
- The cross-agency data sharing collaborative that provides oversight for the data within this report, is also involved in building a public dashboard to measure our effectiveness of education and training in meeting the economy's needs for workforce. New sources of data are being explored and accessed; partnerships like Rework America Connected have supported these developments.
- The key performance indicators from career pathways and sector partnerships have been developed and will help measure the effectiveness of these strategies.
- However, the coalition is still lacking valuable data points due to the lack of data available from the Department of Education, and is still challenged with linking several pieces of the pipeline due to a lack of common identifiers.

**Recommendation:** The skills outlined by industry, workforce, education, higher education, and economic development are similar. An alignment of skills terms and definitions would more clearly communicate the intersections and expectations for successful employment in Colorado.

### Updates:

- HB 15-1170 creates the position of a statewide postsecondary and workforce readiness (PWR) coordinator to work with key partners to raise the level of postsecondary attainment by

Coloradans. In addition, it adds a new CDE performance measure based on the percentage of high school graduates who enroll in postsecondary education immediately following high school. The CWDC and CDE have finalized the required memo of understanding for implementation and are in the process of hiring the PWR coordinator.

- Colorado has made progress in updating the definition of PWR to capture and align Colorado's PWR definition with these primary skills. The Departments of Education and Higher Education are leading this effort and have held several stakeholder sessions regarding this conversation. In addition, HB 15-1170 will provide critical assistance and support for implementation of the updated definition.
- Partners are working to map skills and create a "heat map" to identify areas of opportunity across Colorado. The heat map represents state and federal dollars that are funding similar career-readiness activities in a community/geographic area of our state.
- Adoption of statewide graduation requirements provides the opportunity for all students to graduate with a high school diploma and work ready certificate.
- The work of the Colorado STEM Roadmap committees and board are ensuring that STEM-based competencies across many jobs in today's economy integrate these into educational pathways. The support provided for P-TECH through HB 15-1270 reinforces this alignment and connection between schools, industry and higher education training.
- Through HB 15-1270, P-TECH will create a public-private partnership to prepare thousands of Colorado students for high-skill jobs of the future. P-TECH is an innovative partnership between a school district, a community college(s), and one or more local, high growth industry employer(s). CDE and CDHE have worked to create the request for proposals and have established that they will utilize the CWDC Education and Training Committee as the review committee, and will then forward recommendations to the Commissioner of Education and the Executive Director of Higher Education for final selection.
- Offered by many workforce centers in Colorado, ACT WorkKeys assessments in Applied Mathematics, Locating Information, and Reading for Information can lead to earning the CareerReady Colorado Certificate. During the 2014-2015 fiscal year, 816 adult and youth clients of Colorado workforce centers received CareerReady Certificates.



● The Workforce Assessment Redevelopment Team, comprised of staff from several workforce centers and facilitated by CDLE Workforce Development Programs, designed a new Colorado Employment Skills Certificate (CESC). The CESC expands the CareerReady Colorado Certificate to include all assessments offered by workforce regions in the state. The new design is currently in development, and will include analysis of critical skills such as attitude, communication, planning and organizing, critical thinking, interpersonal/social skills, team work, professionalism, and media rules.

**Recommendation:** Continue to utilize the career pathways model to align education, training and work-based learning so students and potential employees have a clear picture of what education and experience is necessary and the steps to pursue a specific career for top jobs.

**Updates:**

● Colorado's work is moving forward with great momentum from support provided through SB 14-205, along with HB 15-1170 and HB 15-1270, as discussed above, and HB 15-1274 and HB 15-1275.

● HB 15-1274, Career Paths in Growing Industries, provides support for the creation of new career pathways for students in critical occupations in growing industries. Led by the CWDC, this partnership of agencies has evaluated best practices and lessons learned from the development of the manufacturing career pathways, and have begun work in IT career pathway development. This includes the process of identifying critical occupations, assessment of the skills needed for those occupations, and exploration of career pathway models. These efforts include partnership with entities in New Mexico and Utah that are also working on IT career pathways. The Colorado Technology Foundation and the Colorado Technology Association Talent Committee have taken the lead in partnering with the state to create these industry-driven IT career pathways. The online tools that will host these career pathways are being constructed by College in Colorado, a division of DHE, in cooperation with the CWDC. The positions created by this legislation will be filled soon. This work is happening in partnership with the STEM Roadmap and efforts around increasing computer science educational opportunities.

● Efforts in this area are demonstrated through the continued support and development of sector partnerships and career pathways, NoCO Manufacturing Sector Partnership's recently completed skills panel pilot, the creation of the Business Experiential Learning Commission, the adoption of BASIC, and Colorado's partnership with Rework America Connected.

● HB 15-1275 allows coursework related to apprenticeship and internship programs to be counted in concurrent enrollment programs. In addition, it requires CCHE to establish a tuition assistance program for Pell-eligible students whose coursework does not meet Pell-eligibility requirements. CDE and CDHE are leading discussions with the Concurrent Enrollment Advisory Board for internships/apprenticeships recommendations by January 2016.

● Colorado has utilized the infrastructure put in place by 2014 legislation to continue this work by utilizing concurrent enrollment (CE) to carry out the alignment between K-12 education and Career and Technical Education. Significant increased enrollment in CE and ASCENT courses every year, and the increasing enrollment of underrepresented minorities in CE courses, is leading to improved college attendance and performance after high school graduation. SB 15-138 funds ASCENT, the fifth year high school program where students can graduate from high school with an associate degree or 60 college credits.

● SB 15-290, Student Leaders Institute, establishes a competitive residential summer academic program for students entering 10th and 11th grades for the purpose of increasing the number of high school graduates entering postsecondary education. This institute is under development by CDE and CDHE with leadership from the Lt. Governor.

● Additionally, SB 15-082, County-Based Incentives Program, allows counties to establish local workforce development funds to provide tuition assistance to high school graduates who wish to pursue postsecondary education or training and is providing valuable resources for local communities to invest in their local talent pipeline. For example, in Weld County the Bright Futures grant program will ensure that almost any high school graduate, GED recipient and honorably discharged veteran will qualify for \$3,000 per year for up to a maximum of \$12,000 for four years to attend any postsecondary education, including private, public, in- or out-of-state colleges, trade schools and professional programs. To fund the program, donors will give money to the grant trust fund program, of which the county will return 50 percent in the form of a property tax rebate.

● HB 14-1384, the Colorado Opportunity Scholarship Initiative, has allocated \$7 million in 1:1 matching funds in FY 2015-2016 for counties, institutions of higher education and workforce development programs. With matching funds, local programs can leverage state funds to incentivize additional private funding for scholarships to address affordability issues for students and



## APPENDIX B: UPDATES ON THE FIRST ANNUAL TALENT PIPELINE REPORT RECOMMENDATIONS

create meaningful pathways for students to access the workforce.

**Recommendation:** Create a collaborative structure to support and incentivize career exposure and work-based learning, such as job shadowing, internships, on-the-job training and apprenticeship, throughout the talent development system, simplifying access for individuals and employers.

### Updates:

Through multiple efforts, including supportive 2014 and 2015 legislation outlined above, Colorado has moved forward in this work. The creation of the BELC and adoption of BASIC creates the collaborative structure to move this effort forward; more information on these efforts is included in this report. Colorado is now exploring opportunities to add resources to make this work happen, as well as research policy and statutory barriers that may inhibit us from moving work-based learning forward.

HB 15-1230, Innovative Industries Workforce Program, provides support for creating a common collaborative structure for paid internships. The CWDC is developing the request for proposals for industry associations to provide connections to the internships, CDLE is in the process of hiring the program manager, and partners are exploring the best methods for building infrastructure to streamline the matching process for both schools and businesses.

Partner agencies are developing and identifying areas of opportunity for apprenticeships/internships, developing a set of templates for industry and/or programs to create customized toolkits, and working to highlight best practices.

CDE is working to spotlight and support K-12 districts that have robust industry certificate components as part of their new Graduation Guidelines policies.

**Recommendation:** Work with industry to create marketing and outreach campaigns so Coloradans have a better understanding and appreciation of good careers and the multiple pathways into them.

### Updates:

Through its Advocacy Committee, the CWDC is leading a collaborative effort to create a marketing and communication plan and strategy for Colorado's Talent Development Network. This work will reflect the connections between education, postsecondary education and training, workforce development, and economic development in ensuring that every Coloradan has access to education and training needed to obtain meaningful employment and that every Colorado business has access to the skilled workforce they need to thrive and grow in Colorado.

HB 15-1276, the WORK Act, provided support for marketing efforts for individual training programs by creating the Skilled Worker Outreach, Recruitment, and Key Training Grant Program. The CDLE has hired a grant manager and is developing the grant criteria for applications. Starting January 1, 2016, the program will begin accepting applications for matching grants from public and private providers of qualified skilled worker training programs. Missing from this legislation was the ability to use some of the funds to create a statewide campaign that each grantee could build off of to have a greater impact in changing the misperceptions of parents, students, teachers and counselors related to the opportunities for great careers in middle-skill jobs, such as positions in the skilled trades. The CWDC is attempting to integrate this message into the communication strategy for Colorado's talent development network, to ensure that these funds are used in the most effective and efficient way.

**Recommendation:** Develop policies that support expansion of services to underserved populations to ensure access to educational and career pathways to employment (e.g., underserved minorities, veterans, youth, long-term unemployed, ex-offenders).

### Updates:

The Workforce Innovation and Opportunity Act (WIOA) specifically focuses on aligning services to better serve populations with multiple barriers to employment. Colorado is approaching implementation of this new law as an opportunity to build upon existing infrastructure to create a world class talent development system. This work is being facilitated by the CWDC in partnership with state, regional and local organizations, including government and non-profit. Colorado has been recognized as one of the most proactive states in the nation for WIOA legislation, and as a national model for local-state collaboration on implementation.

The Division of Vocational Rehabilitation is working in partnership with the Department of Labor and Employment to better align employment services. This work includes proactively advancing the process of moving DVR to CDLE, utilization of the WIOA implementation to align both state and local services, and a process of conducting stakeholder meetings throughout Colorado.



- The Department of Higher Education, along with support from partner agencies, is focusing its resources on closing Colorado's attainment gap by at least half by 2025, through engaging external stakeholders in a collective impact strategy around solutions to close the gap. In addition, the Department led the development of the Colorado Opportunity Scholarship Initiative, which has committed \$6.8m in two-year grants to public and non-profit entities focused on wraparound support services. The Initiative just pledged \$7m toward matching grant opportunities for scholarships for students across Colorado, and is completing a database that will identify and track progress on student support programs and scholarships offered across the state. This summer, the Initiative convened nearly 100 program administrators and counselors to discuss student success best practices and identify opportunities for collaboration.
- Additionally, the Department partnered with HCM Strategists and the Lumina Foundation to fund research on Colorado's inventory of student success practices and technology. With this research, work can now begin to share best practices and begin to better understand additional investments that Colorado's colleges and universities need to make to improve student success. On November 3, 2015, a state-wide convening will be held to discuss these best practices and the Guided Pathways to Success (GPS) initiative. GPS efforts encourage degree completion, the integration of student success best practices and efforts to address enrollment demands.
- HB 15-1030, Employment Services for Veterans Pilot Program, requires CDLE to administer an employment services for veterans pilot program. This is a small pilot that will serve up to 20 veterans, and is required to be contracted to a non-profit organization. The CDLE is developing the guidelines and a solicitation for the contract.
- As discussed in above updates, many pieces of recent legislation are providing support for career pathway development, all of which will provide additional support for serving special populations.

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