

# Colorado's Emerging Postsecondary & Workforce Ecosystem

Trends, Challenges, & Ways Forward

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## Introduction

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As part of the Promoting Equity in the Future of Work and Learning project, the Bell has embarked on a broad landscape assessment of Colorado's emerging postsecondary education and workforce training ecosystem. Building on the Bell's Guide to Economic Mobility in Colorado, the first phase of this project considers the extent to which the postsecondary education and workforce training landscape is equipped to address economic inequality, demographic shifts, technological change, and decreases in public investment. Future phases of this project will (1) provide a deeper and more complex picture of the emerging ecosystem by examining innovative efforts and (2) develop policy recommendations that address the changes necessary to develop greater equity in the future of work and learning.

Attention to job placement outcomes and career readiness has changed the conversation around the value of postsecondary education and workforce training. In 2012, Colorado passed a credential measurement and outcome policy known as the Skills for Jobs Act. The bill requires the Colorado Department of Higher Education (CDHE) — in consultation with the Colorado Department of Labor and Employment (CDLE), Colorado Department of Regulatory Agencies (DORA), and other entities deemed appropriate — to produce an annual report on state workforce projections and education credential production. The act encourages higher education institutions to use the report in its master planning for course of study offering.

The most recent legislative report shows skills gaps are largest in the skilled trades, mid-level and bachelor's-level information technology, bachelor's-level finance, and graduate/professional-level health care practitioner positions. Several other pieces of legislation have also contributed to the current system.

As one of 35 states with formal work-based learning (WBL) policies, Colorado stands out as a leader in efforts to blend worksite and classroom learning to prepare workers with the skills employers need. Work-based learning initiatives in Colorado exist along a continuum of learning about work (through services like counseling and career planning), through work (like internships and apprenticeships), and at work (on-the-job training and employee development). Partnerships between government, businesses, and a number of strong postsecondary institutions have given rise to an emerging, but still incomplete, system that can be leveraged to address workforce needs and economic inequality in the state.

A critical next step for Colorado will require effective coordination of existing resources to maximize efficiency, sustainability, and create additional capacity to develop programs that address persistent equity gaps. The need for effective coordination must be balanced with flexibility in order to enable an ecosystem that's responsive to changing workforce needs expected in the age of automation and artificial intelligence.

In addition, it's important Colorado looks carefully at existing social supports and programs that aren't directly connected to or administered within traditional postsecondary education or formal workforce training. The rise of concurrent enrollment programs is an excellent example; others include access to quality child care, transportation, and the internet.

# 1 Early Childhood

Early childhood programs  
advancing Colorado's  
equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Colorado Child Care Assistance Program (CCCAP)</b>	The Colorado Child Care Assistance Program (CCCAP) program provides child care assistance to families who are working, searching for employment, or are in training, and families who are enrolled in the Colorado Works program and need child care services to support their efforts toward self-sufficiency. CCCAP provides access to reduced cost child care at licensed child care facilities or qualified (unlicensed) providers.	In 2018, CCCAP served 30,328 children, about 21.8 percent of children in families with incomes at or below 185 percent of the federal poverty level. Approximately 43,299 children would need to be served by the program to reach the 31 percent rate of need in the overall population.	Serves low-income families who are attempting to move toward self-sufficiency.
<b>Child Care Tax Credits</b>	The purposes of Colorado's existing tax credits aimed at child care are twofold: (1) Help parents pay for child care (2) Incentivize people to contribute financially to child care in the state	According to a 2019 evaluation by the Colorado State Auditor, over 200,000 Colorado households are eligible for the Low-Income Child Care Expense Tax Credit, which is intended to make child care more affordable for working families.	Tax credits help low-income parents afford high-quality child care while also helping Coloradans invest in expanding high-quality child care.

## Workforce of Today & Workforce of Tomorrow

For some time now, Colorado has been one of the lucky ones in terms of national economic competition. Despite the Great Recession, which crippled many other state economies, Colorado has remained strong and has grown both its population and economy over time. This is due to a variety of factors, including an influx of several thousands of new, well-educated residents from other states, as well as a handful of large corporate employers emerging onto the scene.

For these and likely many other reasons, Colorado currently boasts low unemployment rates and has the fifth-highest demand for college educated adults among all states in the nation. This economic growth has come at a cost for some of Colorado's longtime residents, who, on average, aren't as highly educated as some of the new folks who call Colorado home. Only about 77 percent of high school students in Colorado graduate (6 percent below the national average).

**In 2015, about 57 percent of Colorado high school graduates enrolled in a postsecondary institution, compared to the national average of about 70 percent.**

There are also large existing racial and ethnic gaps in educational attainment. Colorado has the second largest attainment gap in the U.S. between its white population and Latinx population. As of 2017, whites had a postsecondary credential attainment rate of 64 percent, while Latinxs were at 29 percent, a 35-point gap.

Such disparities have contributed to large gaps in income within Colorado's growing population, alongside increases in housing, medical, and child care costs. These income gaps are important: They tell us something about the nature of our economy, and about where it's going if we don't improve and secure access to education, training, and workforce participation for all Coloradans. Access to these types of training and good paying jobs, paired with access to other necessities — such as affordable housing, health care, and child care — are key to attaining a middle class income and a middle class way of life. Without these necessary components, gaps in income and other attainment measures will continue to widen, especially for Colorado's women and people of color, only to be exacerbated by other emerging education and workforce trends such as automation, increased postsecondary requirements, and the need for reskilling and upskilling.

A recent statistic suggests by 2020, about 3 in 4 jobs in Colorado will require at least some postsecondary education. In addition to requiring higher levels of education, jobs will also be at higher risk of automation in the future. About 477,000 (or 1 in 5) Colorado jobs are estimated to be at high risk of automation. Although some argue automation's effect on the workforce won't be as dire as some estimates suggest, it appears many jobs — particularly jobs that typically require lower education and employ more women — will be at risk.

Systems must be created to ensure access to continuous learning and training to support these future transitions, especially for the women and workers of color who are concentrated in jobs anticipated to be affected by automation. Groups re-entering the workforce, such as previously incarcerated individuals or veterans, need

intensive transitional supports as well. State agencies, private businesses, and nonprofits are working to create educational and training pathways for Colorado workers, with particular attention to youth and older workers, but it's important to note these efforts are often siloed. Many of the individuals interviewed in the process of conducting the landscape study indicated a need for encouraging communication and collaboration among postsecondary and workforce stakeholders and across sectors to effectively identify, assist, and retain Coloradans in the workforce.

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### **Our Changing Population & Equity Concerns**

As we look for solutions, it's important to note two significant shifts to Colorado's demographic profile: the continued increase of our Latinx and older populations. Demographers estimate Latinxs will comprise about 60 percent of growth in our state's working-age population from 2019 through 2050, while CDLE predicts the share of workers aged 55 and over will increase 4 percent between 2010 and 2030, growing from 19 percent to 23 percent. The anticipated rise in Latinx workers underscores the importance of addressing Colorado's significant racial and ethnic gaps in educational attainment,

both in K-12 and in college enrollment and completion. Although high school enrollment among Latinx Coloradans is projected to grow until at least 2025, the current on-time high school graduation rate is 68 percent — 9 percent lower than the state rate, 15 percent lower than the national average, and 10 percent lower than the national average for Latinxs.

These gaps persist at the postsecondary level, where Latinx students are less likely to go to college than their white counterparts. For the class of 2011, 42 percent of Colorado's Latinx students enrolled in college, compared to 63 percent of white students. When it comes to postsecondary completion, 26 percent of Latinxs and 25 percent of whites don't earn a credential within five years of college enrollment.

As the Latinx population continues to grow, Colorado schools and policymakers will need to directly address these racial and ethnic gaps, especially as many Colorado jobs will require at least some postsecondary education (ranging from work-based learning to traditional higher education). If not addressed, Colorado will have an outsized population of Latinx residents without the educational background dictated by the job market of tomorrow. Failing to prepare this population also means Colorado will struggle to meet future workforce demands.

# 2 K-12

## K-12 programs advancing Colorado's equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
AP Courses	<p>The stated rewards of AP courses are to:</p> <ul style="list-style-type: none"> <li>(1) Stand out in college admissions</li> <li>(2) Earn college credits</li> <li>(3) Skip introductory classes</li> <li>(4) Build college skills</li> </ul>	<p>In 2018, 53,220 students took 89,675 AP exams in Colorado. This is nearly double the participation rate in 2008 (27,756 and 46,369, respectively).</p>	<p>AP courses allow students to qualify for college credit before attending college, thereby reducing the overall cost of attendance. College Board and Colorado track equity gaps in participation for students of color and low-income students. Millions of federal and state dollars are spent yearly to increase AP classes in schools that serve low-income and majority black and Latinx students.</p>
<b>Concurrent Enrollment (CE), Career &amp; Technical Education (CTE)</b>	<p>The concurrent enrollment program provides high school students with the opportunity to enroll in postsecondary courses and earn credit at low or no cost to them for tuition. Expanding pathways from high school to postsecondary opportunities is essential to increasing the number of postsecondary degrees earned by Coloradans and decreasing high school dropout rates. Concurrent enrollment programs help students develop the knowledge, skills and abilities necessary to be postsecondary and workforce ready. Technical education courses may include course work related to apprenticeship programs or internship programs that can be applied toward a technical certificate or degree.</p>	<p>In the 2016-2017 school year, 28,290 students participated in concurrent enrollment, up 10 percent from the previous school year. More than 52 percent of students were enrolled in a credential-seeking program. CDE has focused on increasing concurrent education enrollment among low-income and Latinx students. Latinx participants increased 21 percent from the 2015-2016 school year to the 2016-2017 school year. There were 72,199 high school CTE program completions for the 2016-2017 academic year. Of these students, 42 percent were students of color and 33 percent were economically disadvantaged. While CDE manages the concurrent enrollment program, the Colorado Community College System manages the CTE program.</p>	<p>Concurrent enrollment, like AP courses, helps students advance toward a college degree while still in high school. Colorado data show students in concurrent enrollment programs are more likely to enroll in postsecondary education, have higher postsecondary GPAs and retention rates, and have reduced need for remediation. This is particularly important for low-income students, first-generation students, and students of color, for whom rates of college enrollment and completion are lower than their peers.</p>

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**K-12**  
(continued)

K-12 programs  
advancing Colorado's  
equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<p><b>Pathways in Technology (P-TECH) Early College High Schools</b></p>	<p>P-TECH is intended to 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, community college(s), and one or more local high growth industry employer. Students begin in 9th grade and go through 14th grade (i.e., high school and two equivalent years of college) for a total of six years. Students graduate with both a high school diploma and an industry-recognized associate degree, in addition to workplace skills. The associate degree is in a science, technology, engineering, or math (STEM) focused high-growth industry.</p>	<p>As of January 2018, Colorado had five approved P-TECH Schools. In the 2017-2018 school year, 199 students enrolled in P-TECH programs. Of these, 63 percent (126 students) adequately met the established graduation goal, meaning they were expected to graduate on schedule.</p>	<p>P-TECH is open to all students, with a special focus on encouraging enrollment of students who are socioeconomically and racially diverse, the first to attend college in their family, English language learners, and students with disabilities. In addition to other programming, students receive intensive support services and mentoring, which are especially important for underserved populations and those with higher barriers to college completion.</p>
<p><b>CareerWise Colorado</b></p>	<p>CareerWise Colorado is a business-led nonprofit implementing a statewide, three-year modern apprenticeship program for high school students. Apprentices spend part of their week at work and part at school as they progress towards an on-time high school graduation while gaining valuable job training. CareerWise was established by the Business Experiential-Learning (BEL) Commission created by Gov. John Hickenlooper.</p>	<p>CareerWise more than doubled the number of students in the program when it welcomed 126 new apprentices in early 2018. By 2027, 20,000 youth apprentices, or about 10 percent of Colorado students in their last two years of high school, are expected to participate.</p>	<p>CareerWise has expanded its programs across the state, targeting rural counties that can sometimes get left behind in workforce development. It's also attempting to get more women into male-dominated career pathways, like IT and advanced manufacturing.</p>

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## K-12 (continued)

K-12 programs  
advancing Colorado's  
equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Denver Opportunity Youth Initiative</b>	The Denver Opportunity Youth Initiative, led by the Denver Metro Chamber of Commerce, aims to help Opportunity Youth (young adults between the ages 16 and 24 who are disconnected from school and/or work) get workforce training and work experience and get placed in jobs.	About 9,850 of Denver's young people (about 1 in 7 of them) are categorized as Opportunity Youth. According to a 2018 report, about 400 students have been reconnected to high school, a postsecondary opportunity, or a job with 1 of 172 employers.	Students who are disconnected from school and work are more likely to be low-income students and/or students of color than those who are still connected. Programs like the Opportunity Youth Initiative help close existing gaps in educational and workforce attainment for these underserved populations.

In addition to Latinx Coloradans, older workers will comprise an increasing share of the labor force in years to come. Currently, about 1 in 5 adults aged 65 and older still work at least part time. With the share of younger workers predicted to decrease between 2010 and 2030, CDLE recommends stakeholders look to older Coloradans and their wealth of skills and experience to fulfill workforce needs. However, many older Coloradans aren't prepared to work in the jobs of the future. Reskilling and upskilling will be particularly important for this group as they stay in the workforce longer and face jobs that require new skills and competencies.

Barriers are also significant for working women. A recent report by the Bell shows although nearly 63 percent of Colorado women are in the workforce, they're less likely to work than men. About 5 percent

of working women — and 20 percent of households headed by working single mothers — live in poverty. This is partially because women are more likely to work in low-wage jobs and tend to carry the responsibility for child rearing and other family tasks. The National Women's Law Center (NWLC) finds more than 63 percent of Colorado's jobs paying less than \$11.50 an hour are held by female workers. These issues tend to be compounded for women of color. Over half of Colorado's black or Latinx workers are employed in low-wage work, and women of color have lower incomes than white women despite higher labor participation.

Women also have lower participation rates in the skilled trades and apprenticeships — like plumbers, construction, and HVAC — which offer good salaries to those without a bachelor's degree.

In addition to racial/ethnic, age, and gender gaps, there are income gaps as well. In fiscal year 2016-2017, state funding for public postsecondary education was lower than it was in fiscal year 2000-2001 when adjusted for inflation, both in the total amount of funding and on a per-student basis. Over the same period, the portion of public higher education funded by public investment diminished, meaning Colorado families cover most of the tab for college. Specifically, the portion paid by state funds decreased from 68 percent in 2000-2001 to 35 percent in 2016-2017, while the portion paid by students and families doubled from 32 percent to 65 percent. Although some of the wealthiest families can afford the growing price tag, most Coloradans in the middle class and below struggle to cover the rising cost of a college education.

Moreover, public investment in K-12 public education has grown at a slower rate than originally intended. To address the ravages of the Great Recession, Colorado instituted a budget stabilization factor in 2010. It has since reduced funding for schools by over \$7.2 billion, leading to further disparities within our educational systems. If public investment for secondary and postsecondary education isn't restored, only the most privileged Coloradans will have access to a quality education that prepares them for work.

The disparities described above don't simply represent differences in educational and work attainment; they translate into lifelong disparities in income, wealth, and health (Mare 2011). For the future of Colorado's economy — and more importantly, its people — to thrive, we must continue to seek solutions to these inequities across the educational and workforce ecosystem. The populations listed above, in addition to groups like working parents, veterans, and formerly incarcerated

individuals, have historically been at risk of falling through the cracks of training and work systems. Because postsecondary and workforce development hasn't traditionally included additional supports for these populations, their access to, retention within, and completion of programs, as well as their entry into the workforce, have been more tenuous.

## National Women's Law Center finds more than 63 percent of Colorado jobs paying less than \$11.50 an hour are held by female workers.

Historically, Colorado has benefited from high rates of in-migration of people between ages 25 and 34 who have strengthened the state's pool of workforce talent. That said, the decreased rate of in-migration into our state in the coming years highlights the need to ensure postsecondary education and workforce training opportunities are accessible to all Coloradans. New programs and systems must be judged on their efficacy and success to serve these populations in low-cost and effective ways.

Thankfully, several stakeholders have identified this need and have begun creating programmatic and systemic solutions to these problems of equity. Below, we will share findings from our discussions with these stakeholders, and provide examples of the work they're doing, including how they're addressing equity gaps head on.

## Postsecondary & Workforce Training Stakeholders

Stakeholders in Colorado's education and workforce ecosystem are organized in different ways, depending on how one sees the various parts fitting together. (Some stakeholders don't even think "ecosystem" is the best term to describe the emerging system, or rather, the term is somewhat aspirational.)

There are seven major stakeholder categories that provide education and workforce training in Colorado. Below, we describe who stakeholders serve, services they provide, and where they're located or the geographic areas they serve. On the following pages, we provide examples of innovative approaches to workforce development and postsecondary.

While not exhaustive, the list captures the most common types of stakeholders and those who serve the most people in the state. The list also represents the arenas where much of the legislative work on postsecondary and workforce development has taken place over the last 10 years. For stakeholder examples, as well as a more comprehensive guide to these stakeholders, please see Appendix I.

## K-12 Public Schools

- **What:** Kindergarten through 12th grade compulsory educational institutions. CDE has made great strides in helping high school students earn industry-recognized credentials before they graduate. They've done this through:
  - [Early College High Schools](#)
  - Pathways in Tech ([P-Tech](#)) Early College High Schools
  - [Concurrent Enrollment](#)
  - Accelerating Students Through Concurrent Enrollment ([ASCENT](#))
  - Career & Technical Education ([CTE](#))
- **Who:** Serve approximately 900,000 young people every year, most between ages 5 and 18. CDE also serves adults through basic education services.
- **When:** Primary education in Colorado dates back to the [mid 1800s](#).
- **Where:** Throughout the state. CDE has set [multiple strategic goals](#) to expand access and opportunity for historically underserved students by 2022.

## Traditional Postsecondary Education

- **What:** Public/private two-year and four-year colleges/universities (both nonprofit and for-profit). There are 17 two-year colleges and 14 four-year colleges/universities in Colorado, as well as 103 private and seminary schools. Degree-granting institutions are subject to Colorado's [Degree Authorization Act](#).
- **Who:** Serves high school graduates in Colorado; these may be recent high school graduates or adults with a high school diploma or equivalency (e.g., GED). Throughout its history, the Colorado Community College System has been known for making college credentials accessible to [adult learners and displaced workers](#).

- **When:** Colorado's oldest postsecondary institution is the University of Denver, which was founded in 1864. As Coloradans began to seek alternatives to the mining industry and seeking training for different fields, vocational programs emerged. Trinidad State Junior College graduated its first class in the 1920s, and the Colorado Community College System was formalized in 1967 as part of the Community College and Occupational Act. They are leading efforts in industry collaboration at the state level, through workforce incentives, upskilling grants, talent development, and industry-recognized credentials.
- **Where:** Throughout Colorado, but concentrated in urban and exurban areas.
- **Innovation:** The Colorado Community College System and Metropolitan State University (among others) have created extensive partnership networks with Colorado employers to create seamless transitional programs that guide students from school to work. These schools have also been leaders in providing wraparound services to their low-income and other at-risk students, such as food pantries, child care, and first-generation supports.
- **Who:** Serve those who qualify and can afford to attend. Students at for-profit schools have less favorable outcomes compared to their peers at public and private nonprofit institutions, with negative impacts more greatly affecting students of color. According to a 2017 report from the Center for Responsible Lending, for-profit schools in Colorado have significantly lower graduation rates (26 percent, compared to 44 and 53 percent for public and private respectively); higher debt burdens (\$32,452 compared to \$21,345 and \$24,726, respectively); and higher cohort default rates (14.7 percent compared to 7.3 percent and 5 percent, respectively). The disproportionate impact on low-income students of color is also alarming: Enrollment at Colorado for-profit schools is 11 percent black and 57 percent low income. Public and private four-year schools are 5 percent and 7 percent black, and 35 percent and 43 percent low-income, respectively. For-profit enrollment represents 44 percent of all black students enrolled in Colorado institutions, but only 16 percent of all undergraduates.
- **When:** Rules and regulations for Private Occupational Schools were first codified in the Private Occupational Education Act of 1981. In 2010, the number of occupational schools climbed 12 percent, according to the department's Division of Private Occupational Schools, after growing only 5 percent per year for the previous five years.
- **Where:** Located throughout Colorado, but concentrated in urban areas.

### Private Occupational Schools

- **What:** Provide training in a variety of fields including high-demand fields such as health services, IT, and cybersecurity; 354 officially registered Private Occupational Schools in Colorado; providers can operate without accreditation. Out-of-state Private Occupational Schools that solicit and recruit students in Colorado must apply for approval and an agent permit with the Division of Private Occupational Schools (DPOS).

# 3

## Postsecondary

Postsecondary programs advancing Colorado's equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Colorado Community College System (CCCS)</b>	<p>The Colorado Community College System is the state's largest higher education system. The system was formalized in 1967 as part of the Community College and Occupational Act. The stated mission of the Colorado Community College System is: "To provide an accessible, responsive learning environment that facilitates the achievement of educational, professional, and personal goals by our students and other members of our communities in an atmosphere that embraces academic excellence, diversity, and innovation." They are leading efforts in industry collaboration at the state level, through workforce incentives, talent development, industry recognized credentials, and upskilling grants.</p>	<p>In 2017, approximately 13,932 CTE certificates and degrees were awarded to postsecondary students at 13 CCCS colleges and 1,591 to secondary students, while 23,625 postsecondary students were enrolled in CTE programs. The total number of secondary students enrolled in high school CTE programs was approximately 103,800.</p> <p><b>Transfer:</b> Over the course of a year concluding in fall 2016, 11,744 CCCS students transferred to public and private four-year colleges and universities.</p> <p><b>Workforce Development:</b> As of academic year 2016, nearly 169,000 Colorado workers have been trained through CCCS programs. Community colleges train more than half of the state's nurses and more than 90 percent of it's first responders.</p> <p><b>Concurrent Enrollment:</b> In 2016-2017, CCCS colleges served 25,513 high school students in undergraduate courses, an increase of 52 percent over the previous five years. A total of 1,920 college credentials were awarded to concurrent enrollment students in high school in 2016-2017.</p>	<p>Throughout its history, the Colorado Community College System has been known for making college credentials accessible to adult learners and displaced workers. This system has been, and remains, a central lever for increasing college attainment and workforce development throughout the state.</p>

# 3

## Postsecondary (continued)

### Postsecondary programs advancing Colorado's equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Bachelor's Degrees in Nursing</b>	Colorado has a nurse shortage (as do many states around the country). Additionally, research demonstrates better patient outcomes in facilities where most nurses have a bachelor's degree in nursing. Programs designed for nurses with an associate degree to earn a bachelor's degree build on nurses' existing foundation of technical patient care skills and lead to higher incomes.	Colorado is the tenth state to allow community colleges to offer bachelor's degrees in nursing. The number of 2015 bachelor graduates in nursing (1,860) from public and private Colorado institutions is lower than the number of projected annual job openings of (2,350), which is an annual unmet need of 490 nurses per year.	Bachelor's degrees in nursing allow Colorado to fill its nursing shortfall as the need for nurses grows, and they also lead to higher wages for nurses, an overwhelming majority of whom are women.
<b>Transfer Agreements</b>	Transfer agreements were developed in order to ensure Colorado students earn credit for prior learning at another institution, without having to pay extra for additional credits. If an institution of higher education admits a junior as a transfer student who holds an associate's degree that is the subject of a statewide degree transfer agreement, the institution shall not require the student to complete any additional courses to fulfill general education requirements.	Transfer agreements are useful for students who wish to complete their degree at another institution, but who cannot afford to pay again for general education requirements.	Such agreements are particularly useful for low-income students, for whom the cost burden of college often leads to non-completion.
<b>College Credit for Military Education &amp; Training</b>	This credit is offered to military veterans, who are often highly trained, but only have access to 36 months of GI bill funding. This allows them to transition more smoothly into college and complete their education before their funding runs out.	Veterans face an increased risk of poverty and failure to complete their postsecondary education if they are placed in college courses without appropriate recognition of college-level learning acquired while in the military and targeted guidance from the institution to ensure that GI bill benefits are used effectively to complete a chosen program of study.	About 44 percent of Coloradans do not have a postsecondary credential, and 56 percent of veterans are in that 44 percent. This helps veterans transition back into civilian life and work toward a degree in a timely way that recognizes their level of prior training and education.

## Online Education Providers

- **What:** Online platforms providing instruction and training remotely to millions of users; these can include traditional colleges and universities like Colorado State University's Global Campus, or for-profit institutions. In 2015, about 73,000 Colorado students were enrolled in exclusively online programs. About 60 percent of those students attended public institutions, which are subject to state regulations. However, many of the for-profit institutions that served the remaining 40 percent of students have a history of deceptive recruitment tactics, as well as low average completion rates, questionable academic quality, and high student debt loads and default rates. A 2012 U.S. Senate report shows 15 of the largest for-profit institutions received 86 percent of their revenue from federal student aid.
- **Who:** Students throughout Colorado. Research shows low-income students, students of color, and other at-risk students (who have been traditionally underserved by higher education) are targeted by for-profit institutions that offer online educational programs.
- **When:** CSU-Global was created by the Colorado State University System Board of Governors in 2007 as the first independent, 100 percent online state university in the U.S.
- **Where:** Throughout Colorado.

## Businesses

- **What:** Public-private partnerships between business and government focused on workforce development and training; some businesses also provide their own training institutes/academies to workers. Colorado is one of only a few states where businesses are helping lead talent development efforts alongside government. Engaging employers in workforce development has been a key strategy of the Colorado Workforce Development system for at least a decade. Engaging employers ensures local education and training needs are targeted.
- **Where:** Located throughout Colorado, but concentrated in urban areas; major efforts are underway to create more sector partnerships in rural and other underserved areas.
- **When:** Although efforts have existed for decades, businesses have been partnering more heavily with public agencies and other stakeholders for the last 10 to 15 years.
- **Innovation:** Businesses throughout Colorado have partnered with CDLE and the Colorado Workforce Development Council (CWDC) to engage in sector partnerships. This framework aligns industry needs with education and workforce development, and targets key industries vital to Colorado's regional economies.

## Nonprofits

- **What:** Serve as intermediaries or provide support to help students attend and complete their education; often they provide services such as child care, housing, access to public benefits, transportation, and help with emergency needs, such as the cost of fixing a flat tire or car battery.
- **Who:** Students and those seeking work.
- **When:** One of the largest nonprofit organizations in the state, Mile High United Way, was formed in 1887.
- **Where:** Located throughout Colorado, but concentrated in urban areas.
- **Innovation:** Colorado is home to several nonprofit innovations that have helped shape the emerging workforce ecosystem. CareerWise creates opportunities for young people and businesses across the state by developing and supporting a forward-thinking, sustainable youth apprenticeship program. Their model is business-led and student-centered, bringing together public and private stakeholders to help students access skills and knowledge needed for financial and academic success. The leadership of business ensures employers have access to highly-trained talent. Skillful, Skillful, a nonprofit initiative of the Markle Foundation, is dedicated to creating a labor market that values skills by developing skills-based training and employment practices in collaboration with state government, local employers, educators, and workforce development organizations. The organization is dedicated to helping people more easily access the information and education they need to keep up with the labor market as technology continues to change the way we work.

## Workforce Development System

- **What:** The Colorado Workforce System is a network of federal, state, and local offices supporting economic expansion and developing workforce talent. Activities benefit employers, veterans, job seekers, laid-off workers, youth, and people with disabilities, as well as new and current workers.
- **Who:** Workers, job seekers, employers, laid-off workers, youth, veterans, people with disabilities, and formerly incarcerated individuals.
- **When:** Workforce efforts are largely codified within the Workforce Innovation and Opportunity Act (federal legislation), and Colorado's WIOA State Plan.
- **Where:** The Colorado Workforce System is made up of 19 workforce regions and more than 50 workforce centers.
- **Innovation:** When Larimer County Economic and Workforce Development realized a significant proportion of local families were falling off TANF rolls due to late timesheets (required for ongoing eligibility), they conducted research to find out why. A lack of transportation and the consequent inability to get into the office were major issues. Larimer County created an online system to remind families about due dates for their timesheets and ensure they were able to turn in them in on time. Recognizing the link between workforce and economic development, the Larimer County Workforce Center recently merged these two programs to provide more seamless services to clients.

# 4

## Workforce

Workforce programs advancing Colorado's equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Skilled Worker Outreach &amp; Key Training (WORK) Act</b>	<p>The purpose of the WORK Act is to increase awareness of and enrollment in skilled worker training programs. Partnering with business and industry to determine critical workforce needs, the program awards matching grants to eligible applicants to engage in outreach and recruitment efforts to increase enrollment in and completion of skilled worker training programs, provide skilled worker training, or both. A training program must be an accredited educational training program, occupational education training program, apprenticeship, or similar training program; it doesn't include funding for bachelor's or higher degrees.</p>	<p>As of April 2017, there were six grantees, who collectively enrolled 905 individuals. Of those, 494 (55 percent) completed. Low completion was due in part to programs that extended beyond the date of data collection (e.g., as of 2017, nobody had completed because the cohort would be enrolled until 2019).</p>	<p>Because four-year college degrees are costly, they aren't necessarily accessible to everyone. Promoting skills training with hands-on instruction in the workplace, including internships, on-the-job training, and apprenticeships, the WORK Act provides opportunities in growing fields for those who cannot afford an expensive college degree.</p>
<b>Workforce Centers</b>	<p>Workforce centers provide free services to assist employers and job seekers:</p> <ul style="list-style-type: none"> <li>- Job listings</li> <li>- Computer and internet access</li> <li>- Career counseling and training for job seekers</li> <li>- Recruitment of workers, pre-screening, and referral services</li> <li>- Tax credits and training reimbursement for employers</li> <li>- Customers can choose either self-service or staff-assisted options to meet their employment needs</li> </ul>	<p>There are over 50 state workforce centers listed on the CDLE website. Because centers are regional, and because data capacity is often limited, data on numbers served is hard to find. State and federal funding for this programming should include funds for increased data and evaluation capacity.</p>	<p>Colorado's workforce centers serve some of the state's most underserved populations: low-income job seekers and their families, older Coloradans, young people at risk of disconnecting from school, and those who are in transition (either because they are unhoused, they are veterans, they were previously incarcerated, etc.). They do a lot of different types of work for these populations, and without them it is unclear where such large groups of underserved Coloradans would find these services.</p>

# 5

## Transitional Workforce

Transitional workforce programs advancing equity & opportunity

Program	Stated Purpose	People Served (who & how many)	Impact on Equity
<b>Transitional Jobs Program (ReHire Colorado)</b>	ReHire Colorado is a transitional employment program created in 2014 and administered by CDHS. The goal of this program is to help individuals with barriers to employment re-enter the workforce by combining wage-paid work, job skills training, and supportive services.	According CDHS, as of 2018 ReHire has helped more than 1,044 people earn income and gain work history, skills, and employment references via subsidized jobs. An additional 475 have received training, job readiness classes, and resume writing to support their job search.	The provision of supportive services is a crucial element of programs that serve people with extreme barriers to employment. A 2017 randomized controlled trial conducted by the CU Boulder Department of Economics shows (compared to a control group) participation in the program led to higher rates of employment participation and average quarterly earnings and lower rates of TANF (but not SNAP) participation for three priority groups: aged 50 and older, veterans, and non-custodial parents. ReHire's participants also include previously incarcerated individuals, those for whom English is not their first language, and recovering alcoholics and drug addicts.

## How Legislation Helped Develop the System

In the last 10 years, Colorado has changed the way it approaches workforce development and postsecondary. Most importantly, there has been a growing recognition of the importance of being able to track and serve students, workers, job seekers, and employers throughout their lives and careers. Colorado has passed a number of bills impacting how stakeholders serve state residents and the allocation of resources within the system. A number of policies have attempted to close the gap between high school, higher education, and the workforce.

For some communities, these gaps have proven to be difficult to bridge. However, legislative developments have enabled and emboldened various stakeholders to invest in postsecondary and workforce projects, infrastructure, and systems. State-level stakeholders have been particularly influential in this work, including agencies such as CDLE, CDHE, and various units and divisions housed within those departments.

In 2009, state legislation was passed to amend public K-12 funding and to require schools to create an Individual Career and Academic Plan (ICAP) for all incoming 9th grade students. The goal was to help students, families, and schools track college preparation and planning services, as well as enhance career planning. A few years later in 2012, the House passed the Skills for Jobs Act, which required CDHE to produce an annual report projecting state workforce needs and number of degrees, certificates, and other postsecondary credentials issued by institutions of higher education and vocational education providers in the state.

This was followed by a Senate bill that required CWDC in CDLE to produce an annual Colorado Talent Pipeline Report. The report gives an update on the status of career pathway programs targeted at key industries, an analysis of data regarding skills required for key industry jobs, recommendations related to advancing the talent pipeline and career pathways, and suggestions regarding the alignment and consistency of data collection and sharing practices. Denver Metro Chamber of Commerce also became one of the first chambers in the nation to pilot a program to engage youth aged 16 to 24 who are disconnected from school or work. On the higher education side, the Colorado Community College System published a strategic plan that included experiential learning and advocated for cross-sector partnerships.

Starting in 2015, Colorado passed a series of workforce bills targeting enhancement of career pathways development for Colorado students. For example, the Increasing Postsecondary and Workforce Readiness Act raised the level of postsecondary and workforce readiness Colorado students must demonstrate upon graduation from high school. One critical shift brought by this legislation is a reframing of performance metrics by directing CDE to give each postsecondary enrollment option — Career and Technical Education programs, community college, or four-year college/university — equal weight in calculating performance. During this same year Gov. Hickenlooper established the Business Experiential Learning Commission (BEL) to develop, evaluate, and implement a systemic solution for integrated work-based education and training to meet the needs of Colorado's economy.

Building on the enthusiasm for experiential learning, CDLE launched Innovative Industries Internships to provide incentives for businesses to hire interns in industries with high projected growth. The same year, CDLE received a grant from the U.S. Department of Labor's Apprenticeship Accelerator program to support the expansion of registered apprenticeships.

A year later, CareerWise launched its first cohort of youth apprentices, and a number of state education agencies launched the Work-Based Learning Incubator supporting K-12 school districts in developing high-quality work-based learning opportunities.

Alongside these developments, legislation has also been passed to help working parents with child care, recruit and retain high-quality teachers for the K-12 educational system, and support concurrent enrollment programs. Collectively, these measures sought to expand opportunities for Colorado residents to access postsecondary education and workforce training resources.

**Colorado has passed a number of bills impacting how stakeholders serve state residents and the allocation of resources within the system.**

## **Emergent Themes & Common Experiences**

For this project, we conducted interviews with over 20 postsecondary and workforce stakeholders in Colorado. Most were in the larger Denver area, but many serve people all over the state. Interviews were initially unstructured, but over time became semi-structured to capture common themes emerging from the data, as well as specific data points we sought to collect. Interviews lasted 30 minutes to 60 minutes. By talking to people from all of the various categories, we were able to develop an exploratory overview of common experiences among stakeholders and across sectors.

Stakeholders approach postsecondary and workforce development from various perspectives and operate within different sets of constraints and freedoms. As such, the way they understand the work can vary, based on variables like the funding they receive, the legislation that mandates their work, the services or programs they provide, and the populations and regions they serve.

Despite these differences in approach, some similar themes emerged from our interviews with stakeholders. We address these in the following pages, as well as key variations across stakeholder feedback, as informed by their distinct positions within the ecosystem.

While these experiences are by no means universal and the sample below is not fully representative of all stakeholders within the ecosystem, the topics included were consistently mentioned by those we interviewed.

## 1 Early Childhood

- Child Care

## 2 K-12

- AP Courses & Concurrent Enrollment  
- Career Pathways Systems & Programs

## 3 Postsecondary

- Accountability  
- Degrees & Certificates  
- Funding & Affordability

## 4 Workforce

- Aligning Skills with Demand

## 5 Transitional Workforce

- Older Workers & Other Transitional Workers  
- Veterans

### Reference

**Bill Number**  
Dept. / Funding Source  
Bill Name

### 1 Child Care

- SB16-022** CDHS / GF  
Child Care Assistance Cliff Effect Pilot Program
- SB16-212** CDHS  
12-Month Eligibility Child Care Assistance Program
- HB17-1002** CDHS / GF  
Child Care Expenses Income Tax Extension
- HB17-1355** CDHS / FF, WI  
County Block Grant Money to Child Care Quality Programs
- HB18-1208** DPA, DOR funds / GF  
Expand Child Care Expenses Income Tax Credit
- HB18-1335** CDHS, Counties / FF, GF  
County Child Care Assistance Program Block Grants (\$20k federal)
- HB18-1004** CDHS / GF  
Continue Child Care Contribution Tax Credit

### 2 AP Courses and Concurrent Enrollment

- HB09-1319/SB09-285** SF / CDE, CDHE, LEPS  
Concurrent Enrollment Programs Act/Inclusion of Career & Technical Education Postsecondary Courses in the CE program
- HB15-1275** CDE, CCHE, CDHE, CDLE / GF  
Career & Tech Education in Concurrent Enrollment
- SB15-138** CDE, LEPS, CDHE / SF  
ASCENT Program Funding
- HB16-1144** CDE, LEPS / WI  
Transparency in Postsecondary Courses Offered to High School Students
- HB17-1294** CDE / NI  
Counting ASCENT Program Students in Graduation Rate
- HB18-1005** CDE, CDHE / WI  
Notice of Postsecondary Course Enrollment Options Available to High School Students

**HB18-1052** CDHE, CCHE / WI  
Exception to two-year Higher Education Service Areas

**HB18-1193** CDE, LEPS / SF  
Extend Advanced Placement Incentives Program

**HB18-1396** CDE, CDHE, CCHE / GF, G, CF  
Advanced Placement Exam Fee Grant Program

**SB18-225** CDE, CDHE / SF  
Definition of Early College High Schools

### Career Pathways Systems & Programs

- SB09-256** CDE / GF, SF  
Individual Career & Training Plans (ICAPs)
- HB15-1170** State Board / GF  
Increasing Postsecondary and Workforce Readiness
- HB15-1230** CDLE, CWDC / GF  
Innovative Industry Workforce Development Program

**HB15-1270** CDHE, CCHE, CDE / GF  
Pathways in Technology Early College High Schools

**HB15-1274** SBCCOE, CDE, CDHE, CDLE, CWDC, OEDIT / GF  
Creation of Career Pathways for Students

**SB15-082** BoCC / R  
County Workforce Development Prop Tax Incentives

**HB16-1198** CDE, LEPS / WI  
Computer Courses Fulfill Graduation Requirements

**HB16-1289** CDLE, CDE, CDHE / GF  
Incentives to Complete Career Development Courses

**HB17-1180** CDHE, CCHE / WI  
Tuition Assistance for Certificate Programs

**HB17-1184** CDE / GF, G  
Modern Technology Education in Public Schools

**HB17-1194** CDHE, CCHE, CDE / NI  
Technical Changes for P-Tech Schools

**HB17-1201** CDE, LEPS / WI  
Science Technology Engineering Math Diploma Endorsement

**SB17-272** CDE, LEPS / GF, WI  
Measures of Postsecondary & Workforce Readiness

**HB18-1266** CDE / GF  
Career Development Success Program Expansion

### 3 Accountability

**HB15-1350** CDE / WI  
Review Performance Rules Alternative Education Campuses

**HB16-1375** CDHE, CDE, GA / WI  
Due Dates for Reports Involving Department of Higher Education

**HB18-1226** CDHE, GA / GF, CF, WI  
Due Dates for Reports Involving Department of Higher Education

**HB18-1226** CDHE, GA / GF, CF, WI  
Due Dates for Reports Involving Department of Higher Education

### Degrees & Certificates

**HB18-1086** CDHE, CCHE / WI  
Community College Bachelor Science Degree Nursing

**HB18-1300** CDHE, CCHE  
Bachelor Nursing Completion Degree Local District College

**SB18-069** CDHE  
Enforcements Statewide Degree Transfer Agreements

### Funding & Affordability

**HB16-1350** CDHE / SF  
Higher Education Transfers Fee-For-Service Contracts

**HB17-1180** CDHE, CCHE / WI  
Tuition Assistance for Certificate Programs

**SB17-258** CDHE / GF, WI  
Using Open Educational Resources in Higher Education

**HB18-1331** CDHE / GF, CF  
Higher Education Open Educational Resources

**SB18-206** CDHE, CCHE  
Research Institutions Affordability for Residents

**SB18-262** CDHE / GF  
Higher Education Targeted Master Plan Funding

### 4 Aligning Skills with Demand

**HB12-1061** CDHE, CDLE, DORA / WI  
Skills for Jobs Act

**SB14-205** CDLE, CDHE, CDE, OEDIT / WI  
Talent Pipeline Working Group/Report

**HB15-1271** OEDIT, CCCS / SF  
Mobile Learning Labs Workforce Development

**HB15-1276** CDLE, CDHE, OEDIT / GF  
Skilled Worker Outreach, Recruitment & Training

**HB15-1336** CDLE, DORA, CDHE / GF  
Expand Job Growth Tax Credit for Higher Education Project

**B2015-004** CDLE, OEDIT / WI  
Creating the Business Experiential-Learning Commission

**HB16-1287** CDLE, GA / WI  
CDLE Pre-Apprenticeship & Apprenticeship Study

**HB16-1302** CDLE / WI  
Align With Workforce Innovation & Opportunity Act

**HB17-1357** CDLE / GF  
Extend Colorado Department Labor Outreach Recruitment & Key Training Grant Program

**HB18-1316** CDLE / GF, CF  
Extend Colorado Department of Labor and Employment Skilled Worker, Outreach, Recruitment & Training Grant Program

**SB18-005** DOLA / WI  
Rural Economic Advancement of Colorado Towns

**SB18-042** CDA / GF, CF  
Agricultural Workforce Development Program

### 5 Aging Workers & Other Transitional Workers

**HB15-1033** DOLA / GF  
Strategic Planning Group on Aging

**HB16-1290** CDLE, CDHS / GF, CF  
Extend Transitional Jobs Program

### Veterans

**HB16-1197** DORA / CF, WI  
Military Veteran Occupational Credentials

**SB16-134** DOR, DVMA / WI  
Professional Licensing for Military Veterans

**HB18-1334** CDLE, CDHS / GF  
Extend Transitional Jobs Program

**HB18-1343** CDLE / CF  
Veterans' Service-to-Career Program

**HB18-1337** DMVA / GF, CF  
Veterans' One-Stop Center in Grand Junction

### Funding Key

- CF** Centrally Appropriated Funds
- FF** Federal Fund
- GF** General Fund
- G** Grants
- NI** No Fiscal Impact
- SF** Special Funds
- WI** Workload Increase

### Entity Key

- BoCC** Board of County Commissioners
- CCHE** Colorado Commission on Higher Education
- CDE** Colorado Department of Education
- CDHE** Colorado Department of Higher Education
- CDHS** Colorado Department of Human Services
- CDLE** Colorado Department of Labor and Employment
- CDA** Department of Agriculture
- DOLA** Department of Local Affairs
- DMVA** Department of Military and Veterans Affairs
- DPA** Department of Personnel and Administration
- DORA** Department of Regulatory Agencies
- DOR** Department of Revenue
- GA** General Assembly
- HEGB** Higher-Ed Governing Board
- LEPS** Local Education Providers
- OERC** Open Educational Resources Council
- OEDIT** Office of Economic Development and International Trade

## **Silos vs. Collaboration: Working Together Within the Ecosystem**

A number of stakeholders discussed the challenges of working within a large and dynamic ecosystem. While there does seem to be some opportunity for collaboration, stakeholders expressed concern that many pieces of the ecosystem are siloed from one another, despite common goals and services. Some systemic silos have been overcome in recent years. For example, while K-12 education, postsecondary education, and workforce development were previously seen as distinct activities, many stakeholders have come together to knit education and workforce activities together in a more cohesive way.

Concurrent enrollment is one instance of this collaboration. In the 2016-2017 school year, 28,290 students participated in concurrent enrollment, up 10 percent from the previous school year, and more than 52 percent of those students were enrolled in a credential-seeking program.

Districts and postsecondary institutions also work closely with employers, another example of partnership. The state's P-TECH program creates public-private partnerships between school districts, community colleges, and one or more local high growth industry employer. As of January 2018, Colorado has five approved P-TECH schools. In the 2017-2018 school year, 199 students enrolled in P-TECH programs. Of these, 63 percent (126 students) adequately met the established graduation goal, meaning they're expected to graduate on schedule with both a high school diploma and an industry-recognized associate degree in a science, technology, engineering, or math (STEM) focused high-growth industry.

Despite these positive examples of collaboration across traditionally distinct domains, separation and competition among programs are common issues for stakeholders. One told us:

***“Generally, we need to figure out how to cross silos. [Various programs] are working together, but there are still massive silos between organizations, and between many agencies that are doing this work.”***

This stakeholder referred to silos as more of a systemic implementation issue, a common refrain in our interviews. Generally, silos were seen as the result of lack of communication across different sectors or lack of knowledge about existing programs or services. Others mentioned silos in terms of unwanted and unhelpful competition between different agencies and institutions. Rather than engaging in competition across the ecosystem, one said:

***“I think that we should be coming from a collaborative framework with industry and education and all providers, so there is this continuum and we're not competing. I think that's a good use of public resources.”***

Stakeholders talked at length about this type of competition within the ecosystem. While individual entities are typically set up to meet the postsecondary and workforce needs of Coloradans, the reality is funding and other support is usually tied to enrollment or participation. This means different entities end up providing the same services and targeting the same populations, which can lead to redundancies and inefficiencies.

Funding was another issue creating created silos. One stakeholder described challenges with working with the populations who seek services, despite funding mandates that limit their reach to a subset of the population:

***“We have a youth entrepreneur tournament. Our agency has nice culture of entrepreneurship and because of that, we feel really empowered to raise money that maybe our federal law doesn’t allow us to do. So we’ll be hosting the 11th annual event. It serves about 30 young people, but will double in size this year. It’s funded exclusively by other foundations and business partners in our community. Because of that, we can serve young people as early as third and fourth grade who come into the workforce system. Whereas, federally, we’d only be able to help 14-year-olds and up. But one-third of our young people are under that age.”***

The entrepreneurial spirit described by this stakeholder was echoed by many of their colleagues. Innovative funding work-arounds are necessary for stakeholders who find they must serve a wider population than they’re mandated to serve.

One stakeholder spoke at length about a major complication caused by silos in this system: Teachers at many high schools, they said, are doing their own independent leg work to get students connected to employers when their principals or other leaders in their district might already have a good (but poorly advertised) program in place to develop these connections. This led to extra work by already-overburdened teachers, confusion on the part of students and employers, and redundant efforts.

While some of these gaps have been smoothed over, this stakeholder expressed concern that a lack of coordination would continue to create such redundancies. While some redundancy and competition might work in a free market system, a system which seeks to serve specific populations and to close equity gaps may function better with the goal of collaboration for the common good.

Finally, several stakeholders described the reluctance among educators to embrace business-centric models of workforce development, as well as business leaders’ isolation from traditional postsecondary academic programs.

**As one stakeholder put it, there is a “gross imbalance” between what is considered meaningful in education circles and what is considered meaningful in industry.**

While the Bell doesn’t take a position on the relative value or efficacy of existing models, some stakeholders noted the detachment of these domains from one another has inhibited the pace of innovation and attainment. If this emerging ecosystem is to grow and evolve to serve all Coloradans, stakeholders from disparate worlds need to be in the same rooms and at the same tables.

## Barriers to Service

While postsecondary education and workforce training certainly present their own challenges, it's often the challenges faced outside the classroom or off the job that threaten to derail people's efforts to seek training and work. The stakeholders we talked to routinely discussed barriers faced by people they serve who are low-income, rural, older, and first-generation students. Again, many of these barriers were seen as implementation issues, while others were seen as the lack of attention educational institutions paid to various populations. Some programs have attempted to provide supplementary services people need to overcome common barriers and be more successful in training and work.

Several of these barriers are related to large income gaps as mentioned earlier, alongside significant increases in housing, medical, and child care costs throughout the state. Access to training and good-paying jobs, paired with other necessities like affordable housing, health care, child care, and transportation are important pieces of a robust ecosystem.

For instance, a center for workforce and economic development located in a mostly rural region must approach service delivery with a different set of objectives than a center located in a large urban area. In a rural area, families might be less likely to have access to the internet or reliable public transportation. Often these obstacles require creative solutions, which we will discuss later in this report.

Common challenges discussed by stakeholders include verifying eligibility for services, obtaining transportation, accessing affordable child care, and gaining familiarity with the culture of higher education institutions. On the issue of benefits eligibility, one said:

***“If you’re eligible, with a zero expected family contribution, you’re extremely low-income, you’re much more likely to be asked for verification documents, most of which you can’t provide. And even if they get that request, people just vanish. They just give up. In fact, we count on 50 to 80 percent of them disappearing after they get the verification request. There doesn’t seem to be any basis for it, because it’s the students who do verify, I mean they almost always verify, ‘Yes, it’s true, we don’t have any money.’”***

Others also described the difficulty of maintaining benefits eligibility. One group of stakeholders discussed issues they faced with TANF eligibility and clients who were disappearing off the rolls because they lacked access to transportation. For some families, having transportation can be the key to helping them navigate particular requirements. These service providers solved their particular eligibility problem by seeking private funding and outside technical support, but they found it frustrating the eligibility system seemed set up for families to fail. They took the situation into their own hands and found a solution that worked for families and enabled them to continue receiving TANF aid. This type of aid acts as a crucial support for adults seeking education or training through monthly basic cash assistance payments, help with emergency household expenses, and/or services like counseling and job training.

While these stakeholders did find a workaround for this issue, others are more complex or not as readily solvable. For instance, stakeholders described the barriers experienced by low-income and first-generation students and their families as they adapt to the culture, language, and social norms of higher education.

According to one:

***“There’s a communication gap between how we talk to students from marginalized families. For example, do parents understand concurrent enrollment?”***

Another set of stakeholders described this issue at greater length, particularly focusing on the difficulties students face navigating higher education systems:

***“I think the administration of it is not easy. It’s not easy for first-generation students to be able to understand — even certain words, like ‘What’s a registrar? What’s a bursar?’ ‘How do you fill out these forms? Why is it important?’ I think the enrollment and administration is challenging for students who don’t have a family that knows how to navigate higher ed... It’s just challenging for first-generation students to know how to access the bureaucracy of higher ed.”***

Other thorny issues, like child care, are being addressed by various groups of stakeholders, in order to guarantee parents have access to high quality care that allows them to complete training and seek work. The Strengthening Working Families Initiative (SWFI) at the Community College of Aurora and the Community College of Denver is one example of stakeholders stepping forward to break down barriers. A partnership between the community colleges and the U.S. Department of Labor, SWFI helps parents access jobs in high demand industries (such as health care, IT, and advanced manufacturing) in concert with programs that address the child care barrier. Despite successful efforts like these, child care remains a significant obstacle faced by most stakeholders in their efforts to retain trainees and employees within the ecosystem.

While SWFI is one example of efforts to identify and meet the needs of students with significant barriers, other institutions are also acting. A Lumina Foundation-funded initiative enabled implementation of targeted strategies to help students of color succeed, in order to advance toward the state’s Master Plan attainment goals. At Community College of Aurora, Community College of Pueblo, and CSU Pueblo, campus interventions include academic coaches and first-generation student mentorship programs to help students complete their degrees.

However, there’s still substantial need for various supports to help people seeking training or work to overcome the difficulties they face in accessing it. Specifically, there is a huge demand for access to quality, affordable child care, affordable housing, and food security for students, workers, and others within this ecosystem. Higher education, businesses, and other workforce stakeholders must partner to meet student and worker needs in these other areas in order to ensure families’ economic stability and well-being, as well as student completion and worker retention and satisfaction.

Finally, cost can be a primary challenge for many seeking postsecondary education. The College Board reports the average college sticker price (estimated cost of tuition and fees, books and supplies, transportation, room and board, and other expenses) has grown by approximately 10 percent to 25 percent every five years since 1995, but Colorado ranks fourth lowest in higher education funding per student in the country. If costs continue to rise, and families don’t see relief, growing populations of low-income students of color in Colorado’s higher education institutions won’t be prepared to enter the workforce of the very near future.

## State Oversight vs. Local Innovation

One recurring issue for stakeholders was the tension between state oversight and local decision making. Most stakeholders had a stance on the nature of this tension — usually a multifaceted one. Some thought states should step in more often with funding, standardization, accountability, and evaluation. Others thought this only slowed down smaller entities in their quest to innovate and best serve the needs of local people. Some acknowledged the benefits of both, but preferred one over the other for their own purposes. One group said:

***“Sometimes what comes down from the top are mandates that sound good in theory, but are difficult to execute, need more money to execute, or add complexity to an already complex picture... It’s a mixed bag. The fact that we’re locally driven is hugely beneficial. We are strategic about crossing Ts and dotting Is around things we have to do, then take the opportunity to do a lot of different new things. When the goal is consistency and conformity, it has drawbacks in creating solutions that work for the community.”***

One stakeholder who works with various others throughout the ecosystem had a slightly more nuanced approach:

***“Another issue is the state has one set of activities and outcomes, or mandates, and the counties do things how they want to — so how do we even drive some of this through policy if these things aren’t coordinated at the state and local level? I’ve been talking to people in education about this. ‘Local control’ means they get to choose the options they’re interested in and invest heavily, instead of being told by the state to meet certain standards... This takes***

***a tremendous amount of effort, but outcomes when people embrace these things are great because they don’t feel stifled by state mandates.”***

Another set of stakeholders leaned more toward the argument for state oversight. Through their work in higher education, they found the absence of state oversight often meant worse outcomes for the students they served:

***“Without the pressure from above, they don’t see it in their self-interest to do most of these things. Unless the state comes in and says, ‘This is the way that has to be done,’ we have people who don’t want to do it.”***

These three quotes represent different approaches to the issue of state versus local control within the ecosystem. The players in the ecosystem are highly diverse, as are the funding sources and oversight bodies required to help various stakeholders accomplish their goals.

Where some see government involvement as a constraint, others see a welcome help to establish order and consistency in their services. To respond to the educational and labor transitions of the future, stakeholders must be given enough freedom to deliver services to their communities, while also accepting, in some cases, functions like evaluation or standardization can be exceptionally useful in fulfilling the objectives of equity and access.

## Data Collection, Evaluation, & Sharing Within the Ecosystem

Every stakeholder we talked to is dealing with unresolved, or partially solved, data issues. All agreed better data collection, evaluation, and transparency within and across various systems is vital to the success of postsecondary and

workforce initiatives. They also knew better data could lead to more refined practice and clearer outcomes. Data is key to evaluating programs and systems to determine if they are serving populations equitably and increasing access across groups throughout Colorado.

A more centralized or collaborative data system could help stakeholders track students and workers throughout their lives and careers, and also ensure 1. people receive credit for prior training, 2. stakeholders are aware of various services their clients/students are receiving and what services they may need, and 3. stakeholders are providing access to all populations.

However, several stakeholders struggle on this front. Some face financial burdens to set up the technological infrastructure to collect or house data, while others have concerns about data privacy. Overall, most aren't collecting as much data as they would like, and even those who are are frustrated with the lack of money, tools, or political will to create consistent data strategies across various parts of the ecosystem.

***“I would certainly not say our data analysis is a strength... We certainly aspire to have that kind of data and information to help students, but we're not there yet.”***

These stakeholders know better data would help them help their students, but despite years of trying to emulate models from other higher education stakeholders around the nation they still haven't met their goals (for a number of the reasons listed above). For others, the main barrier was finances:

***“Our data collection systems are clunky or nonexistent. We honestly don't have any idea of the demographics of the people who go to the website and***

***benefit from the materials there... We don't collect a lot of data that would be interesting to know. One thing I'd like to do would be to invest in software and processes that reduce data entry. Our current system is from 1995.”***

Stakeholders understand better data systems and collection could not only lead to better service implementation, but also to reduced administrative redundancy. Without data, they told us, it's nearly impossible to target the groups they want to serve or track across time.

One stakeholder we interviewed who was most passionate about this issue told us data is, in fact, key to the success of the ecosystem. Not only data collection, but evaluation, they argued, would help refine practice and ensure those doing good work could be recognized for their efforts:

***“I will mention this quickly because this is the linchpin — measures of every training program, every education program that is supposed to end in employment, need to be collected and evaluated. We need measurement and reports on whether they end in employment or not. None of that is reported today on any meaningful scale... I think we're at the point where we have the data, so maybe it's time to start to shift practice... We should be trumpeting when programs have great successes.”***

Generally, stakeholders need a more accurate and granular understanding of workforce supply, demand, and outcomes. There's growing recognition of the need for legislative changes to allow data to be shared across the ecosystem. While privacy concerns remain a major roadblock to several of these efforts, better data evaluation is necessary to track progress through the ecosystem, particularly if one goal of our postsecondary and workforce programs is to follow, support, and train

workers throughout their careers. At the federal level, there's a ban on student unit record data, meaning accurate and current graduation rates and alumni-earnings information aren't readily available for every institution.

Tracking every student through higher education would be more accurate and let prospective students see how students typically perform at a given institution, whether they're able to repay their student loans, and how much money they make after graduating. Policymakers could use this to measure the return on the \$130-billion-a-year investment in federal aid. Much of this information is available, but isn't reported in a comprehensive way.

Data-driven policy must remain (or become) a priority for all education and workforce stakeholders in Colorado. In the absence of federal measurement, several state governments have stepped up to make this possible. However, in Colorado, data and systems are sometimes inoperable across agencies serving the same people over time.

Furthermore, common nomenclature around outcomes, measurement, and tracking, don't yet exist to support this work across the state. More strategic data practices could allow for enhanced collaboration, cross-pollination, and scaling of efforts across the state. Good data practices also help institutions, organizations, and systems remain accountable to those they serve, whereas a lack of data contributes to ecosystem redundancies and inefficiencies that don't serve students, employers, workers, or the state economy.

Colorado's state agencies have made progress in connecting student data from K-12 to postsecondary to the workforce, but this information doesn't represent and isn't disseminated to all ecosystem participants. According to one stakeholder, the

state has a lot of data that could be useful in tracking and evaluating outcomes, but stakeholders need effective ways to turn data into usable information that spans the emerging ecosystem.

## **The Cycle of Low-Wage Jobs: A Threat to Equity**

Finally, a few stakeholders mentioned issues with existing systems that funnel students into low-wage jobs, then create new workers to fill roles left by those who burn out. This seems to be especially common in the care professions, particularly in low-wage health care jobs. Educational institutions don't currently have the leverage over the employers they work with to change this, because those businesses have significant power based on the current orientation of the system. As one stakeholder told us:

***“There are certified nursing assistants out there in droves who never make it to the next level. They get stuck changing diapers and cleaning up dirty things — tough jobs — and we don't actually have a series of steps to move them up. For instance, CNA programs usually lead to employment, but the vast majority still make below poverty wages five years later, or they're burned out and leave the industry. For all those training programs, we need to know not only what happens directly afterward, but also whether the cohort is thriving three to five years from now. CNAs are currently a dead end, unless you get an employer willing to continue training you.”***

No type of postsecondary or workforce training should lead to a dead-end job. However, an aging population has created increased need for health care workers, many of whom do tough jobs with low pay. Because of an increased demand for these jobs, employers have a distinct advantage. One stakeholder described it:

***“So much of the long-term care stuff is nursing aids, certified nursing assistants... elder care folks, not much of a credential required there — to clean bed pans... That’s one of the things that frustrates me about employers — they want cannon fodder. ‘Give us people with just enough training so we continue to pay them crap, and they won’t have the opportunity to advance, but when they get burned out and leave, you’ve got more in the pipeline for us.’ I want to make sure we help people prepare for a living wage and sustainable employment.”***

While only a few stakeholders referred to this issue within the postsecondary and workforce ecosystem, it’s worth mentioning because of the potential inequity it creates, systemically, throughout the system. Every program that trains people for work and a career should at least lead to a job that pays a living wage. Furthermore, to maintain healthy balance and collaboration within this system, no one actor or type of stakeholder should fully regulate workforce supply or demand.

Women, and women of color specifically, comprise a large portion of the health care workforce, particularly at the low-wage end of the spectrum (jobs paying less than \$12 per hour). Analysis by the Bell finds women currently make up about 88 percent of the health and personal care workforce, and research by the NWLC finds the five jobs expected to grow the most over the next decade are low-income, female-dominated jobs like health and personal care aides. Since it appears demand for health care work will only grow with our older population, something must be done to ensure these workers are paid a fair wage, and that women aren’t at greater risk of getting left behind economically.

Furthermore, well-paying, middle-skill jobs like those in IT, advanced manufacturing, and construction, are alternatives that don’t require a bachelor’s degree, but are currently male-dominated. Making these fields more accessible to women through pipeline programs, apprenticeships, and on-the-job training would enhance Colorado women’s opportunities for well-paying jobs.

## **What Stakeholders Wish Policymakers Knew**

Stakeholders want policymakers to know alignment already exists in many places, but all parties must be at the same table to create structures and systems that work toward the same goals. Many hope lawmakers will broaden their focus beyond simply enrolling students or getting people jobs, but on providing support services so Coloradans can complete a credential and find a sustainable job with good wages.

Others in higher education emphasized they want government to step up to ensure students are served equitably across institutions, and some hope government will embrace community-specific innovation. During our interviews, all stakeholders emphasized the importance of data and evaluation in creating and tracking programs that serve Coloradans well, and equitably, as they seek training or work.

## Next Steps

During the first phase of this project, we learned about several innovative projects, systems, and collaborative efforts aimed at building an inclusive postsecondary and workforce ecosystem. The Bell intends to build on this for the next year. Our primary goals are to:

- Create a deeper and more complex picture of the emerging ecosystem by examining innovative efforts
- Develop policy recommendations for legislators.

Below is our tentative plan for the next phase, including who we plan to work with and speak to, what questions we aim to answer, and additional steps we will take to ensure our understanding and representation of postsecondary and workforce initiatives in Colorado is more comprehensive. We have chosen three existing initiatives for further study:

- First, we will study the work of Larimer County Economic and Workforce Development. It has developed technology solutions and programmatic workarounds to make its services more expansive and reliable. Its efforts to serve Larimer County residents of all ages and backgrounds are innovative, and the group has required a great deal of, often difficult, collaboration with other organizations and agencies. It also works with several other types of stakeholders across the emerging ecosystem, and thus has points of contact with a large portion of the ongoing work. We'd like to pinpoint best practices that may be useful in other collaborations and better understand the challenges impeding the group's work. To do this, we'll shadow and conduct interviews with Larimer County Economic and Workforce Development staff, conduct interviews with trainees,

job seekers, and those in need of other services, and observe various programs as we are able. We will also collect and study any source materials of interest to the project.

- Second, we'll track the ongoing work of SWFI at Community College of Aurora and Community College of Denver. This project works with student parents receiving training in high-demand industries. These student parents are highly representative of college attendees today, many of whom are low-income, first-generation, and/or black and Latinx. Program outcomes may point to key strategies for serving this population more efficiently and at scale. We'll conduct interviews with those managing SWFI, child care providers involved in the program, and student parents who've participated. The purpose of these interviews is to better understand the best practices and challenges associated with delivering support services alongside job training in a postsecondary setting. Source materials will also be collected and studied as necessary.
- Third, we'll continue discussions with local nonprofits working with students, workers, and families on the ground. These stakeholders are often closer than others to the needs and the barriers faced by Coloradans, and have a more intimate understanding of the experiences of people living on the edge of financial stability. At the same time, they are typically further than other stakeholders from either state support or regulation. We will explore the unique position of these organizations within the emerging ecosystem, including who they serve, what state and local mandates mean for various populations, and what funding looks like for these organizations.

Finally, we'll bring our findings to develop policy recommendations aimed at the five emerging themes from the first phase of our research. These include:

- Breaking down silos and enhancing collaboration
- Addressing barriers to service and program participation
- Understanding and ameliorating tensions between state and local postsecondary and workforce efforts
- Bolstering data collection, evaluation, and sharing across stakeholders
- Ensuring no Coloradan gets stuck in a low-wage job cycle

Recommendations may also incorporate data that emerge from additional study of the ecosystem, either through interviews, observations, or primary source materials.

When complete, this project will offer Colorado policymakers, trainees, and job seekers a thorough depiction and deep analysis of our emerging postsecondary and workforce ecosystem. While the aim of the project is to explore, analyze, and report, the Bell Policy Center won't shy away from pinpointing existing problems or tensions that arise during the research.

**The stakeholders involved in this work are doing amazing things for the state's emerging ecosystem, and they face obstacles that get in the way of providing training and work. These obstacles must be identified and examined in order to provide opportunities for all Coloradans.**



## Appendix 1: Stakeholder Examples

Stakeholder Category	Traditional Postsecondary Education	Private Occupational Providers	Online Education Providers	Businesses	Nonprofits	Workforce Development	K-12 Schools (public)
<b>Description</b>	Public/private two-year and four-year colleges/universities (both for-profit and non-profit.)	These organizations provide training in high demand fields (health services, IT, cybersecurity). CO has 316 officially registered Private Occupational Schools. Need not be accredited.	Online platforms providing instruction and training remotely to millions of users.	Public-private partnerships focused on workforce development and training. Some businesses also provide their own training institutes/academies to their workers.	Non-profit organizations serve as intermediaries, or provide additional career pathways support.	Organizations and councils appointed by the Governor to monitor and support workforce development. Focus on shifting towards skills/competency-based system.	Public education system that serves students throughout the state of Colorado from kindergarten through 12th grade. This includes charters schools.
<b>Examples</b>	Colorado Community College System, Colorado State System, University of Colorado, private colleges.	Turing, Galvanize, SecureSet, A Plus Real Estate School, Academy of Natural Therapy, College America, Lincoln College of Tech.	Coursera, Lynda, LinkedIn Learns, Grow with Google, accredited programs such as CSU, CU, DU, University of Phoenix.	Construction Careers Now!, Weifield Group, LinkedIn, CareerWise.	CareerWise, Innovate+ Educate, DEAN/Lumina Talent Hub, Skillful/Markel Foudation.	Colorado Workforce Development Council, Colorado Workforce Centers.	Denver Public Schools.
<b>Accessibility: Cost</b>	Cost varies significantly. The cost of a four-year degree increased dramatically since the 1980s, making it out of reach for a growing number of families.	Varies.	Accessible with a computer and an internet connection. Cost and quality very significantly.	Often free of cost.	Often free of cost or low fee.	Free of cost to users.	Free or low cost (costs typically incurred in Kindergarten programs.)
<b>Accessibility: Location</b>	Distributed throughout the state.	Distributed throughout the state; more concentrated in urban areas.	Distributed throughout the state.	Concentrated in urban areas or rural areas with a strong advanced manufacturing presence.	Concentrated in urban areas.	Distributed throughout the state.	Widely distributed.
<b>Accessibility: Prerequisites</b>	Admissions requirements vary from open-admissions policies to more selective liberal arts colleges (i.e. Colorado College).	Varies from none to very high (i.e. Galvanize)	Varies by course/program	Varies by program. Some programs require at least algebra level math skills. Drug tests might also be required.	Participation can be limited to certain populations (i.e. youth)	N/A	Most have no prerequisites; magnet schools or charters schools have distinct admissions process.
<b>Accessibility: Technological Requirements</b>	Varies by degree program	Varies	Computer and internet access	N/A	N/A	N/A	Cyber schools require internet access.
<b>Accessibility: Wraparound Services</b>	Four-year institutions do not typically provide wrap around services, but many community colleges have begun providing child care and food assistance, due to the high proportion of low-income students and student-parents attending those institutions.	N/A	N/A	Businesses are becoming more aware of the need for services (especially child care) but these are not widely available.	Might provide childcare referrals or transportation support.	Workforce Development Centers provide wrap around services where allowed under WIOA; some have identified and formed partnerships that allow them to provide services beyond that capacity.	High schools will occasionally provide childcare; Florence Crittenton High School has a robust suite of services for pregnant and parenting students.

## Appendix 1: Stakeholder Examples (Continued)

Stakeholder Category	Traditional Postsecondary Education	Private Occupational Providers	Online Education Providers	Businesses	Nonprofits	Workforce Development	K-12 Schools (public)
Scalability	N/A	Depends on market demand.	Easily scaled to accommodate more students.	Determined by needs of the company.	Dependent on availability of funds.	Set by formula.	Determined by catchment area.
Sustainability/ Funding	Mix of tuition dollars, research funding, state/federal funding, endowment funds.	Some providers can accept Veterans benefits, and federal funds while others do not qualify to receive federal funds and offer private loans or work with funding partners (SkillsFund, Climb Credit). Typically paid for by the student.	Business models to support funding for online courses/training are still nascent. Growing market demand for accredited online degrees.	Combination of tax incentives, company funds, and state resources.	Funding primarily from private donations, Workforce Centers through CDLE.	Department of Labor funds to support programming.	Public funds
Interconnectedness	Growing effort to integrate K-12, postsecondary through concurrent enrollment, community colleges; four-year institutions have transfer agreement policies in place and some institutions have industry partnerships	These organizations appear to be more directly connected with the specific occupational area.	Some programs are closely connected to traditional postsecondary intuitions. The virtual nature makes it easy to incorporate into traditional classroom model.	These programs create a network of public-private partnerships. Can be connected to community colleges through non-credit training programs.	Connections to businesses, schools, workforce centers, other non-profits, highly connected.	Work with employers and some increasingly engaging Chambers of Commerce.	Connected to school district and system. Some programs are increasingly connected to community colleges and four-year institutions through Early College programs and concurrent enrollment.
Outcomes	Student graduation rates, job placement outcomes vary significantly by school and degree field; CDHE makes some of these data public.	These organizations will soon be required to report student success outcomes. Data may be available as early as late 2018.	Learning objectives can be clearly delineated and met. Online degree outcomes vary.	Varies by program. Completion rates and retention can be a challenge. If students, they typically are offered a job at the company.	Varies by organization and mission.	Varies	Varies by school, largely determined by SES.
Gaps	Tuition and fees increase as state funding to public institutions decreases; four-year universities beyond reach for many Coloradans, retention rates and graduation rates can be low.	Students are not tracked by CDHE. Curriculum is not regulated through accreditation or updated systematically. Programs such as Galvanize are out of reach for most people due to both cost and prerequisites.	Best practices for online learning are emergent and vary by institution or organization. Completion rates for online courses are low and programs are not always accredited.	Need for more trust building between business and higher education. Limited sources of state funding, training can often be too narrow, making workers vulnerable.	Participation might be limited to specific target populations, services might be redundant and compete for limited resources.	Mandated to provide support for people who are no longer employed rather than those in transition. Could focus more on upskilling while employed; funds are restricted to specific programs.	Concurrent enrollment may be stigmatized.
Opportunities	Grow concurrent enrollment to make college more affordable; allow students to secure credit for work-based learning; enhance data systems to track outcomes; grow private-public partnerships.	POS are flexible organizations that can be better integrated with other educational systems.	Flexible and less expensive than brick and mortar; can be accessed from anywhere in the world; could continue to expand State Authorization Reciprocity Agreements that allow CDHE to track programs.	Use to increase work experience, training, and to build more ties between education and workforce; expand policies that allow apprentices/interns to receive college credit for WBL experiences .	Expand partner connections to engage traditional postsecondary education; increase evaluation of programs and publish best practices.	Expand partnerships and create new programming around career transitions; continue to close gaps among stakeholders, make better use of WFC data sources.	Continue to promote the use of concurrent enrollment as a way to make college more affordable, ensure credit transfers are seamless, use as an opportunity to explore future career options.

