



COLORADO
Department of
Higher Education

2024 Higher Education Return on Investment Report



2024

The Colorado Department of Higher Education
Report to the Colorado House of Representatives Education Committee
and the Colorado Senate Education Committee
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Department of
Higher Education

Prepared and submitted by the
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Introduction

To help Coloradans earn a good living and simultaneously power the labor market, more learners and workers must have the chance to develop new career skills at all stages of life. Students have many options (some while in high school) that allow learners to maximize their earning potential and get a head start in the job market by gaining a competitive edge for employers. To assist lawmakers, taxpayers, students and families in understanding the value of postsecondary education in Colorado, the Colorado Department of Higher Education (CDHE) publishes an annual Return on Investment (ROI) report of undergraduate degree programs and certificate programs offered at each state institution of higher education.

CDHE is required to publish the following information through this report:

- The number of students enrolled in the undergraduate degree or certificate program and the number of degrees and certificates awarded annually for the program, specifically identifying the number of high school students enrolled and the number of degrees and certificates awarded through the career development success program created in section 22-54-138;
- The average time to completion for students completing the undergraduate degree or certificate program and the average number of credits earned by students completing the degree or certificate program;
- The average cost for completion of the undergraduate degree or certificate program, including mandatory program and institutional fees, for a student with in-state tuition classification;
- The average student loan debt for students in the undergraduate degree or certificate program;

- The employment rate of undergraduate degree or certificate program graduates. For purposes of the report, information relating to the employment rate includes the number of individual graduates, the number of individual graduates matched through available data sources, and the number of individual graduates that are not included in the employment rate, with an explanation of why the graduates are excluded from the employment rate.
- The average annual earnings of undergraduate degree or certificate program graduates one, five, and 10 years after graduation or completion.

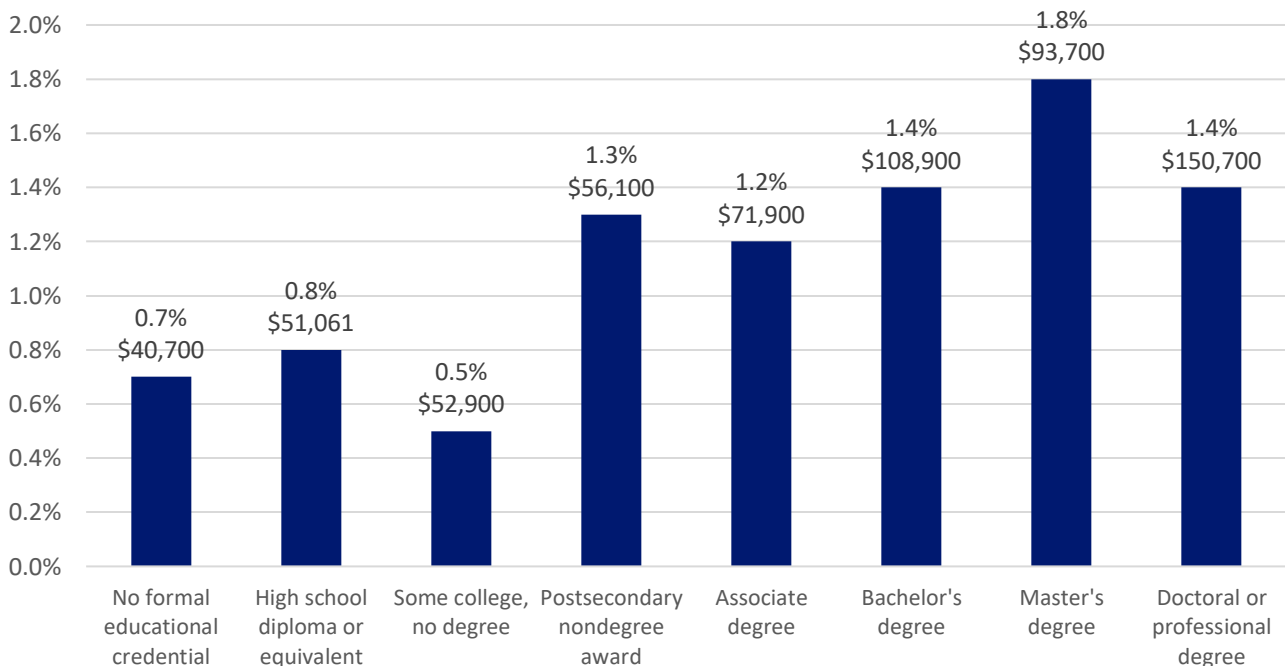
In June 2023, CDHE was the victim of a cybersecurity incident that impacted several CDHE systems. While CDHE continues to recover from the incident, the Department is limited in its ability to perform data collections from the Colorado institutions of higher education. Due to these limitations, **CDHE is currently only able to report on the average annual earnings of undergraduate degree or certificate program graduates one, five, and 10 years after graduation or completion.** As CDHE brings more systems back online and collects more data from Colorado institutions of higher education, the Department will work to report on the additional measures in its 2025 annual ROI report and through a variety of other means.

Fiscal Value: Wages

Data findings associated with Colorado postsecondary graduates shown in previous ROI reports display evidence that postsecondary educational attainment and advancement is positively correlated with higher annual earnings in the labor market year after year. Dollar values representing average annual wages align well with this argument.

Figure 1 findings, showcased in the [2024 Talent Pipeline Report Spring Release](#), reinforce the relationship between postsecondary attainment and wage levels. **The more educational attainment a learner completes, the more likely that individual is to develop the skills needed to qualify for a good job.** Figure 1 also illustrates the projected growth in workforce demand by education level through 2033. In the next decade, employment in Colorado is expected to grow by about 1% per year, and **occupations typically held by individuals with the highest level of postsecondary degrees will likely be leading demand in the labor market in the foreseeable future.**

Figure 1: Average Projected Growth Rate per Year by Education Levels and Wages in Colorado: 2023-2033



Typical Entry-level Education	Annual Growth Rate: Colorado, 2022-2032 (%)	Median Annual Wage: Colorado, 2023
Total, all occupations	1.0%	\$71,600
Doctoral or professional degree	1.4%	\$150,700
Master's degree	1.8%	\$93,700
Bachelor's degree	1.4%	\$108,900
Associate degree	1.2%	\$71,900
Postsecondary nondegree award	1.3%	\$56,100
Some college, no degree	0.5%	\$51,061
High school diploma or equivalent	0.8%	\$52,900
No formal educational credential	0.7%	\$40,700

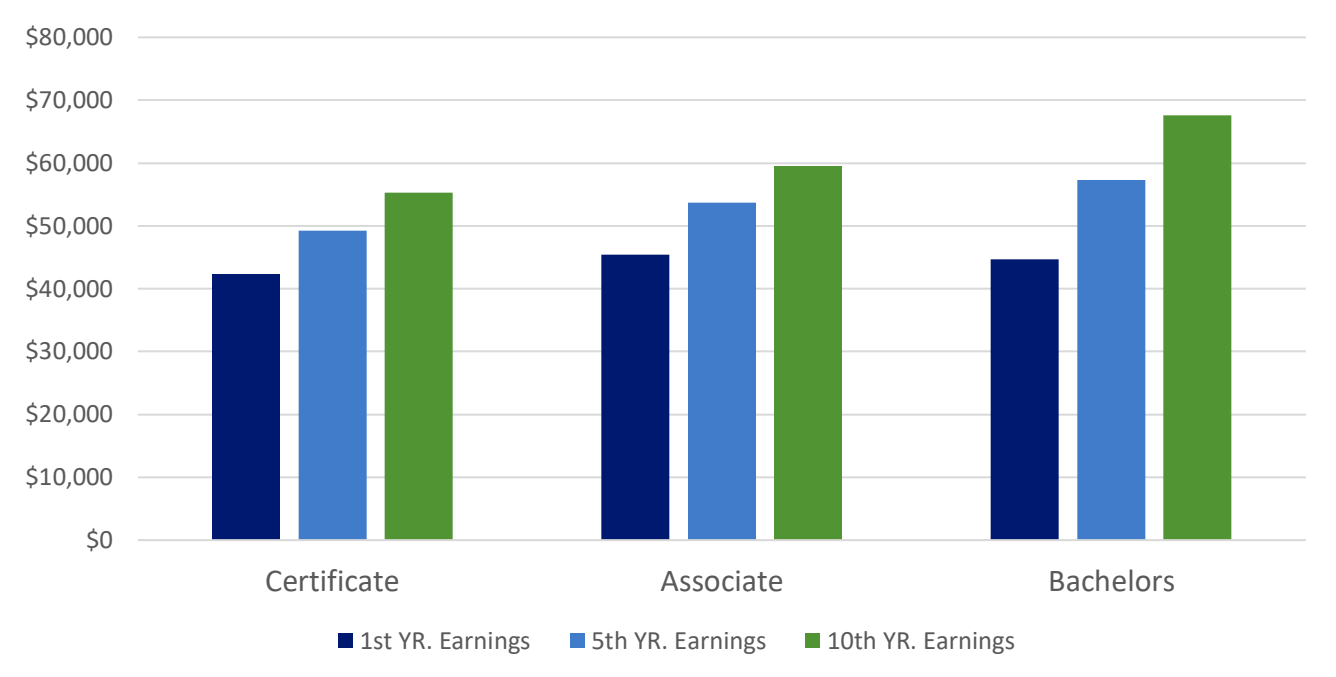
Source: Chmura Econometric Modeling Platform; Office of Labor Market Information, CDLE

Notes: Employment by occupation data are estimates as of 2023 Q3. Education levels of occupations are based on the Bureau of Labor and Statistics (BLS) assignments. Forecasted employment growth uses national projections from the BLS adapted for regional (i.e. state) growth patterns. Wage levels indicate average annual wages by occupation.

Demand for occupations typically held by workers with a master's degree is expected to increase the most relative to other educational attainment levels and at nearly double the average rate of growth across all levels of educational attainment. Jobs that often demand a bachelor's degree or a doctoral or professional degree as a prerequisite are ranked second in terms of expected employment demand by occupation – both by 1.4% per year. As mentioned, higher levels of postsecondary educational attainment are linked to the highest average annual wages, shown next to each growth rate percentage in Figure 1. Data reported in Figure 1 demonstrate how trends in Colorado employment growth projections and earnings align with national trends associated with education level.

According to the most recent data from the Bureau of Labor Statistics (BLS), earnings for workers ages 25 and over continue to increase as educational attainment rises. The 2024 CDHE data collection on wages further supports the statements above. Figure 2 reports the median annual wages of Coloradans broken down by educational attainment over time. These data points show the overarching impact that postsecondary education can have on an individual's earning potential.

Figure 2: Median Wage Outcomes for Colorado Graduates: 1st, 5th, and 10th Year Earnings



	Earnings			
	1st YR.	5th YR.	10th YR.	10 Year Percent Change (Growth)
Certificate	\$42,338	\$49,231	\$55,318	31%
Associate	\$45,430	\$53,721	\$59,507	31%
Bachelor's	\$44,723	\$57,349	\$67,577	51%

Source: Colorado Department of Higher Education 2024 ROI dataset. See Appendix A for documentation.

While at all educational attainment levels, credential earners in Colorado have similar median earnings after their first year in the workforce, however, data indicates that higher levels of educational attainment are correlated with higher earnings in the labor market over time. While students earning bachelor's degrees earn 6% more than those earning certificates in the first year, by the 10th year, bachelor's degree holders earn 22% more than those who earned certificates.

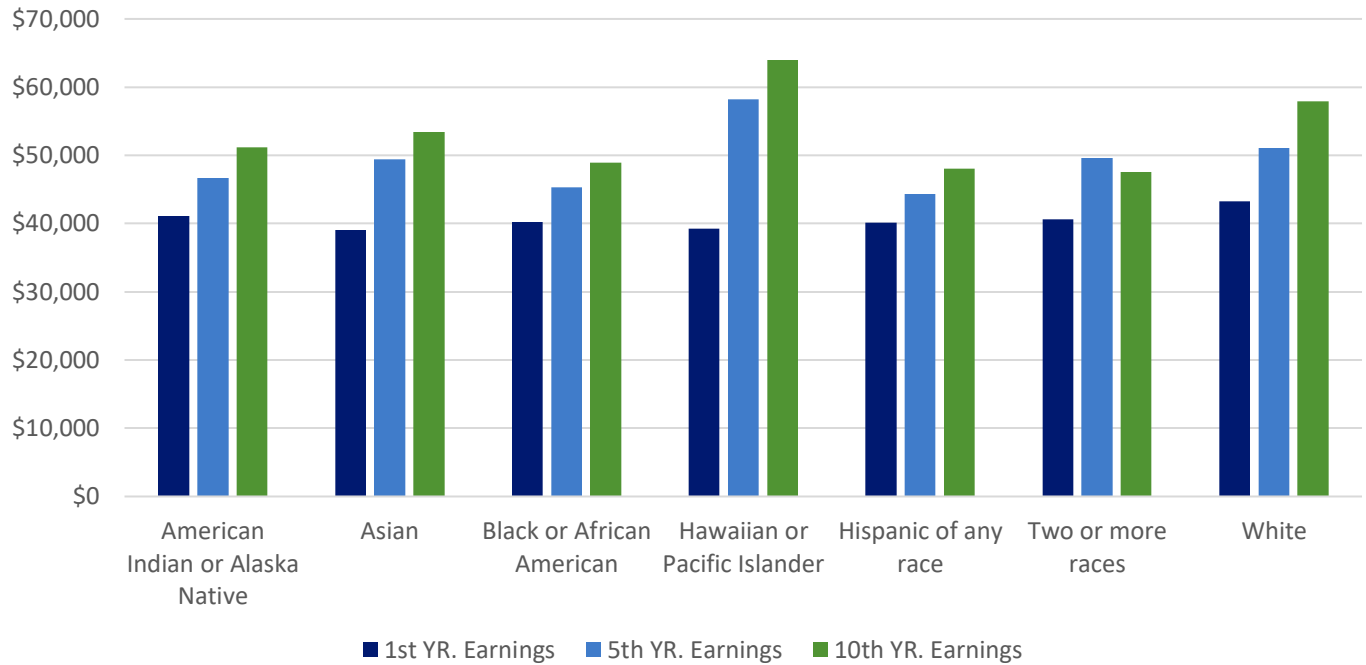
While data show that postsecondary degrees routinely lead to higher earnings in the workforce, many additional elements factor into job quality. The [Colorado Job Quality Framework](#) created by the Colorado Workforce Development Council considers the factors of a good job to include:

- Wages that provide predictable income that covers basic living expenses and allows for wealth-building
- Benefits that facilitate a healthy, stable life
- A schedule that enables workers to balance the other demands of life
- Working conditions offer an environment that promotes physical, emotional, and psychological safety and wellness
- Transparent growth opportunities to advance along a career pathway and increase pay
- A sense of belonging in an inclusive environment where individuals are accepted and connected to one another

Equity in Wage Outcomes by Race and Ethnicity

The difference in median wage outcomes provides a good baseline comparison for equity in wage outcomes. Figures 3, 4, and 5 display disparities in earning levels for different demographics in the state across first, fifth, and 10th-year median earning outcomes by credential type. While gains in earnings vary more over time, wage outcomes for all races and ethnicity groups have similar averages after the first year of completion. This is true for every completion type and **suggests that Colorado's institutions provide equitable returns on investment in the short term after attainment goals are reached.**

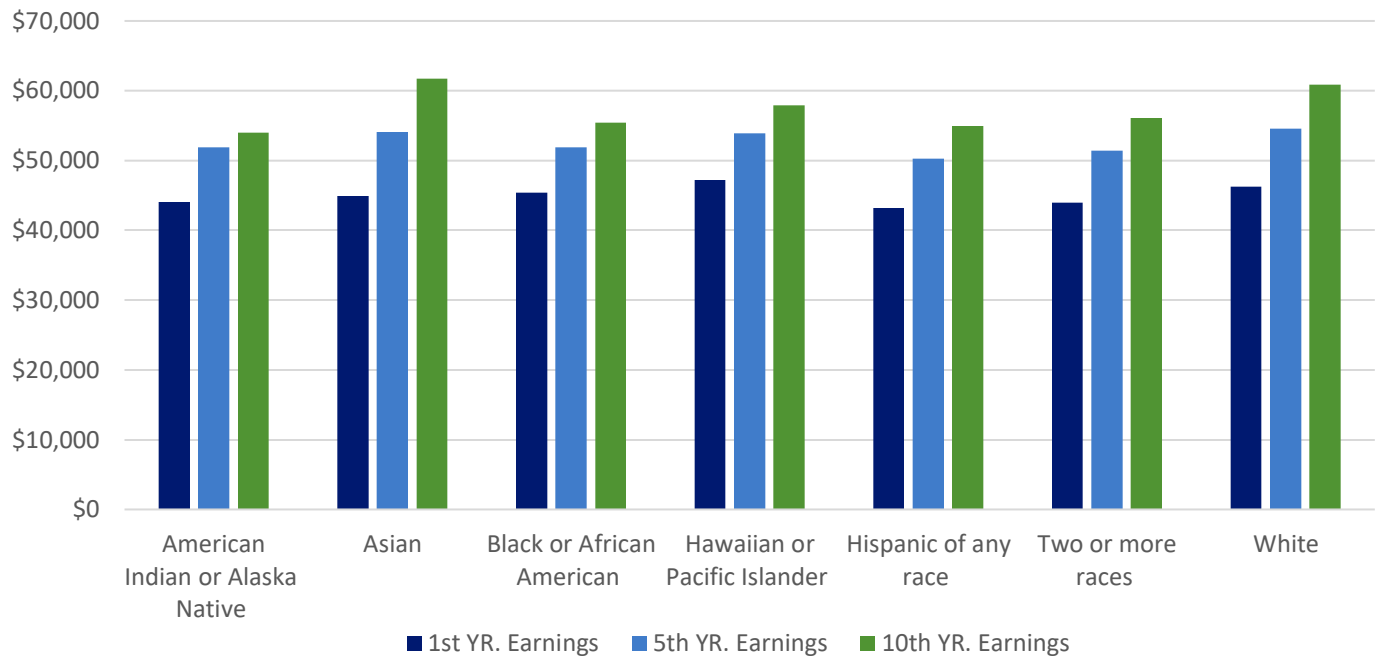
Figure 3: Certificate Earners: 1st, 5th, and 10th Year After Completion, by Race/Ethnicity



	Earnings			
	1st YR.	5th YR.	10th YR.	10 Year Percent Change (Growth)
American Indian or Alaska Native	\$41,152	\$46,656	\$51,221	24%
Asian	\$39,074	\$49,408	\$53,452	37%
Black or African American	\$40,218	\$45,311	\$48,894	22%
Hawaiian or Pacific Islander	\$39,268	\$58,255	\$63,954	63%
Hispanic of any race	\$40,183	\$44,375	\$48,016	19%
Two or more races	\$40,587	\$49,655	\$47,597	17%
White	\$43,301	\$51,095	\$57,898	34%

Source: Colorado Department of Higher Education 2024 ROI dataset. See Appendix A for documentation.

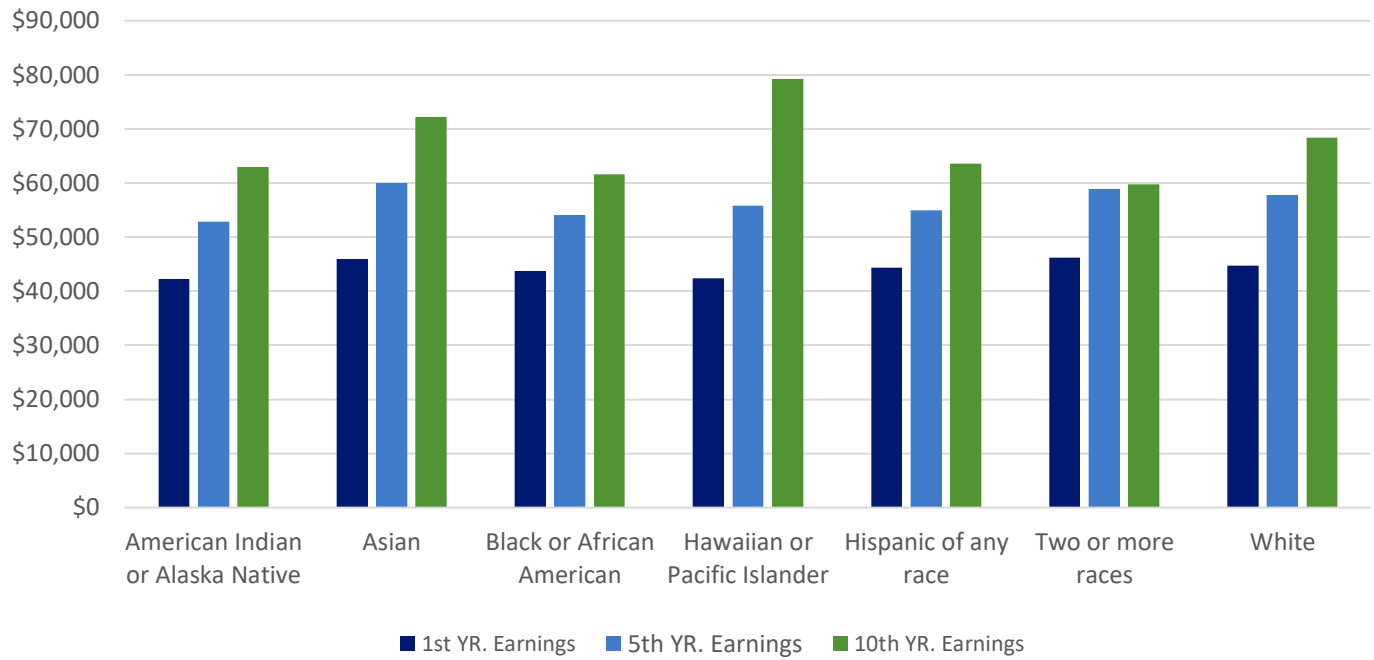
Figure 4: Associate Degree Earners: 1st, 5th, and 10th Year After Completion, by Race/Ethnicity



	Earnings			
	1st YR.	5th YR.	10th YR.	10 Year Percent Change (Growth)
American Indian or Alaska Native	\$44,019	\$51,870	\$53,956	23%
Asian	\$44,931	\$54,109	\$61,774	37%
Black or African American	\$45,406	\$51,931	\$55,446	22%
Hawaiian or Pacific Islander	\$47,175	\$53,885	\$57,902	23%
Hispanic of any race	\$43,175	\$50,298	\$54,993	27%
Two or more races	\$43,973	\$51,392	\$56,055	27%
White	\$46,215	\$54,550	\$60,865	32%

Source: Colorado Department of Higher Education 2024 ROI dataset. See Appendix A for documentation.

Figure 5: Bachelor’s Degree Earners: 1st, 5th, and 10th Year After Completion, by Race/Ethnicity



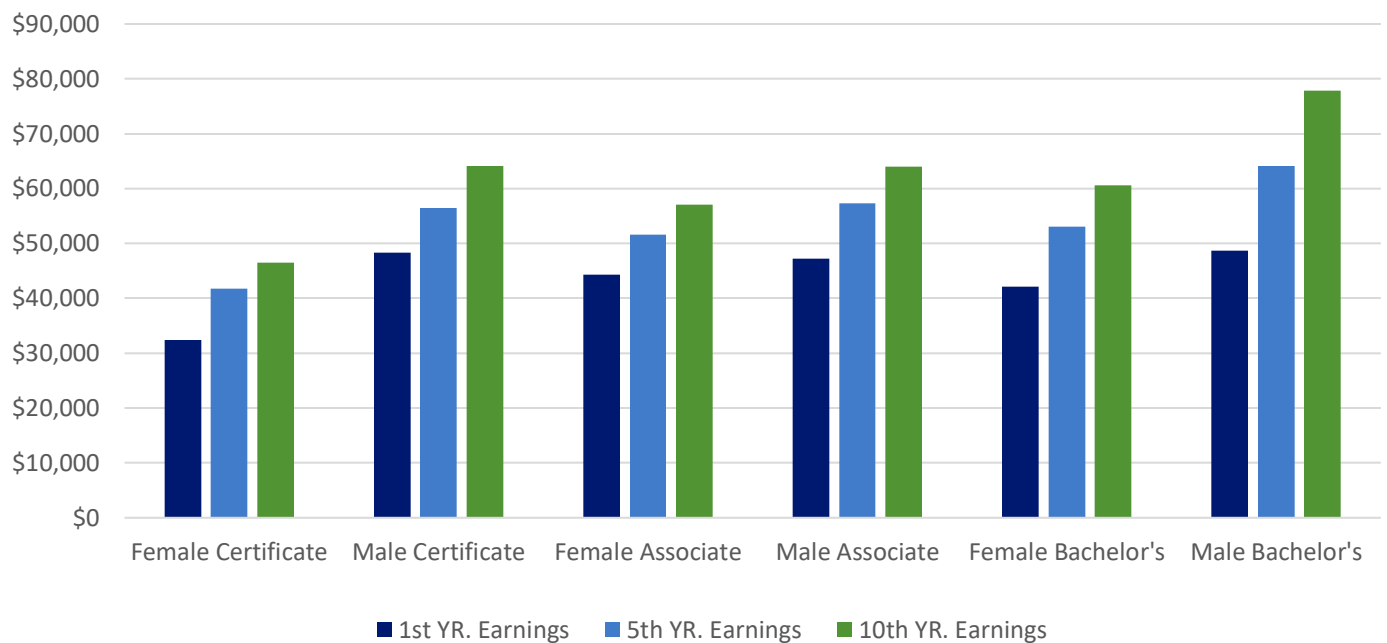
	Earnings			
	1st YR.	5th YR.	10th YR.	10 Year Percent Change (Growth)
American Indian or Alaska Native	\$42,314	\$52,799	\$63,001	49%
Asian	\$45,976	\$59,980	\$72,200	57%
Black or African American	\$43,742	\$54,047	\$61,630	41%
Hawaiian or Pacific Islander	\$42,432	\$55,858	\$79,243	87%
Hispanic of any race	\$44,332	\$54,968	\$63,607	43%
White	\$44,765	\$57,835	\$68,344	53%

Source: Colorado Department of Higher Education 2024 ROI dataset. See Appendix A for documentation.

Equity in Wage Outcomes by Gender

Based on the most recent data, outcomes still indicate that inequity persists regarding sex, as findings report that males continue to have a higher wage premium than females in 2024.

Figure 6: Median Wage Outcomes for Colorado Graduates, Disaggregated by Sex



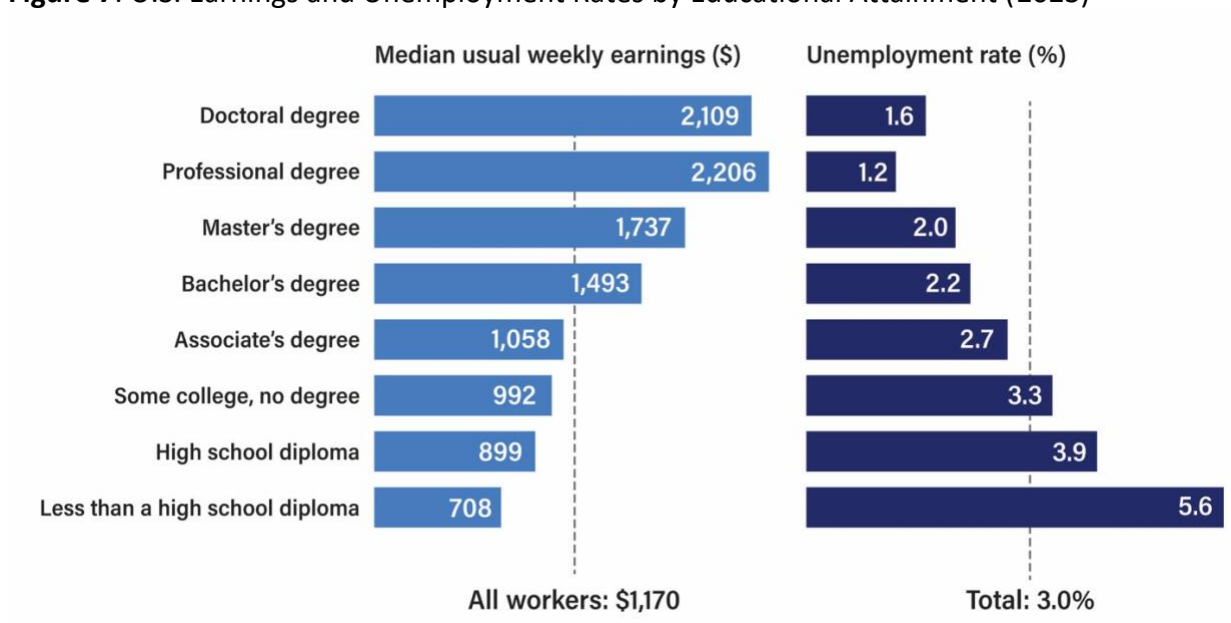
	Earnings			
	1st YR.	5th YR.	10th YR.	10 Year Percent Change (Growth)
Female Certificate	\$32,354	\$41,717	\$46,493	44%
Female Associate	\$44,313	\$51,642	\$57,018	29%
Female Bachelor's	\$42,088	\$53,046	\$60,547	44%
Male Certificate	\$48,375	\$56,500	\$64,079	32%
Male Associate	\$47,173	\$57,310	\$64,009	36%
Male Bachelor's	\$48,740	\$64,086	\$77,857	60%

Source: Colorado Department of Higher Education 2024 ROI dataset. See Appendix A for documentation.

Higher Education Pays in the Workforce

On a national level, unemployment rates generally decrease as learners increase their educational attainment (see Figure 7). Individuals without a high school diploma or equivalent had the highest unemployment rate at 5.6% in 2023 while learners who completed a professional degree had the lowest unemployment rate at 1.2%. **In 2023, those in the labor force without a high school diploma earned nearly 50% less than those who completed a bachelor's degree, and wage outcomes continue to improve with every level of postsecondary degree.**

Figure 7: U.S. Earnings and Unemployment Rates by Educational Attainment (2023)



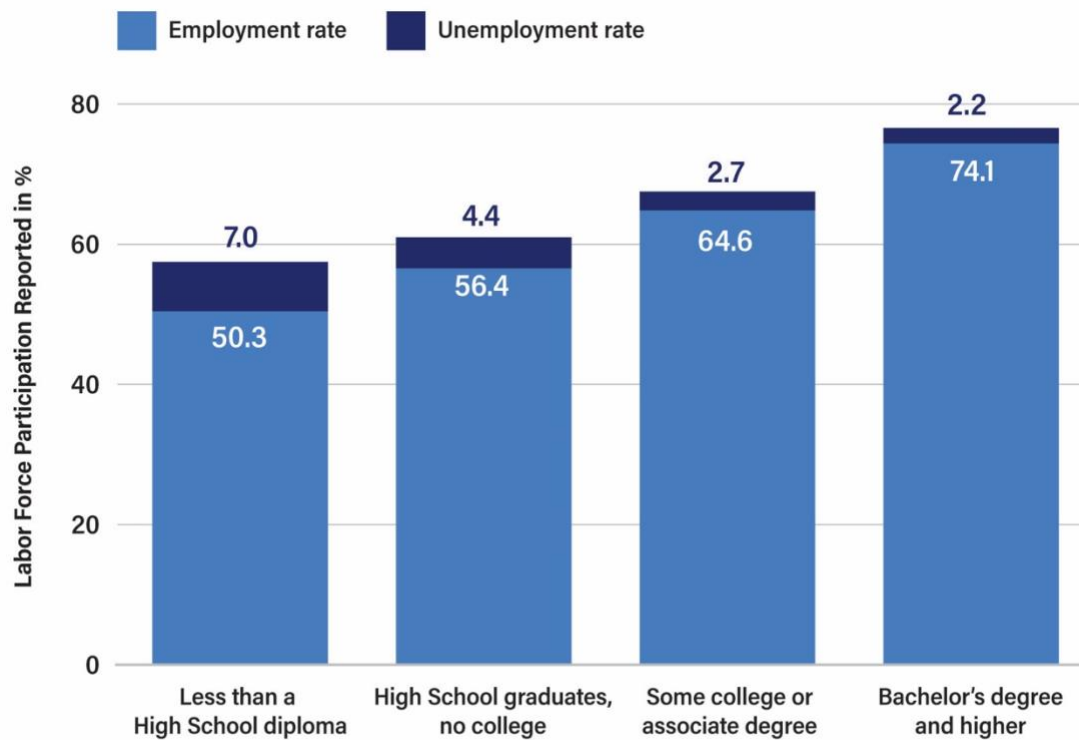
Degree level	Median usual weekly earnings (\$)	Unemployment rate (%)
Doctoral degree	\$2,109	1.6%
Professional degree	\$2,206	1.2%
Master's degree	\$1,737	2.0%
Bachelor's degree	\$1,493	2.2%
Associate's degree	\$1,058	2.7%
Some college, no degree	\$992	3.3%
High school diploma	\$899	3.9%
Less than a high school diploma	\$708	5.6%

Source: U.S. Bureau of Labor Statistics (BLS), Current Population Survey

Notes: Data are for persons aged 25 and over. Earnings represent full-time wage and salary workers.

Largely mirroring national trends, statewide data collected from the Colorado Department of Labor and Employment (CDLE) [Office of Labor Market Information \(LMI\)](#) illustrate a connection between employment and education level. Figure 8 shows the Colorado employment and unemployment rates by educational attainment. The data reported in this figure display an inverse correlation between education and unemployment in Colorado during 2023 and 2024 – thus, as Coloradans increase their educational attainment, they are more likely to be employed and less likely to be unemployed.

Figure 8: Employment Status of Coloradans Ages 25+ by Educational Attainment, April 2023-March 2024



Sources: Colorado Department of Labor and Employment: Office of Labor Market Information Data; Current Population Survey, 2024

Individuals with less than a high school diploma or equivalent are over three times more likely to be unemployed compared to those with a bachelor's degree or higher. Coloradans who have a high school diploma or equivalent as their highest level of educational attainment are two times more likely to be unemployed relative to those who have completed a postsecondary credential.

Affordability

Concerns about rising higher education costs have escalated statewide efforts to make **higher education within reach for all households regardless of income**. In 2024, legislative actions in Colorado have made it possible for middle- and lower-income households to access affordable/no-cost options for learners. These include the Student Educator Stipend Program ([HB24-1290](#)) and the [EmpowerEd](#) program providing higher education funding and support to individuals who experienced homelessness ([HB24-1403](#)).

Additionally, under [HB24-1340](#), eligible students working towards their first 65 credits in certificate, associate, and bachelor's degree programs at Colorado's public institutions will benefit from a refundable state income tax credit (starting in the academic year 2024-25 and tax year 2025) which reimburses approximately the first two years of tuition and fees for those with annual family incomes of \$90,000 or less. This legislation **effectively eliminates the cost of tuition and fees for the first two years of a postsecondary degree** for Colorado students who fall within this income bracket. This funding is available for students who attend any public postsecondary institution within the state, which includes community colleges, four-year colleges and universities, area technical colleges, and local district colleges. In addition to this tax credit program, many public institutions have recently developed promise programs, which cover a student's tuition and/or fees up front for those who fall below a certain income threshold. [Learn more about both the tax credit and institutional promise programs on the CDHE website.](#)

Colorado's 2024 legislation mitigates the long-standing reality that a family's income dictates one's postsecondary educational options.

Calculating Colorado's Minimum Value Threshold

Pursuant to [HB22-1349](#) and the Colorado Commission on Higher Education (CCHE) [strategic plan](#), CCHE has convened a technical working group to:

- Develop student success measures that measure the progression of students through postsecondary education and the impact of postsecondary pathways on a student's career opportunities and success.
- Strategize to create and maintain a statewide student success data system, to be administered by CDHE.

The primary task of the working group is to determine the most appropriate empirical model to estimate the minimum value threshold of postsecondary credentials in Colorado, and the best data elements to support this model.



The Minimum Value Threshold (MVT) calculation will consist of three components:

1. **Realized earnings** are the earnings that students who participate in higher education realize after they separate from school,
2. **Counterfactual earnings** are the earnings that students who participate in higher education would have earned had they not attended school (i.e., if they had entered the labor force with only a high school diploma.) These include lost labor market earnings while enrolled in school, and
3. **College costs** are the costs specific to attending higher education, including net tuition and required fees, books, and supplies.

CDHE will continue to develop this model with feedback from CCHE and institutions of higher education. In alignment with the goals outlined in the Strategic Plan and the statutory directives in HB22-1349, the output of this model will support collaborative conversations between CDHE, CCHE, and institutions of higher education to better understand outcomes for programs and identify potential actions that all stakeholders can take to increase student success.

Concluding Thoughts

Data show that higher education leads to positive economic mobility through increased median wages for all credential and degree levels. As education increases for Coloradans, annual wages also increase across all industry sectors in the state, regardless of the type of credential one completes. This positive return on investment in the workforce leads to a stronger labor market, a vigorous economy, vibrant communities, and ultimately, stronger Colorado families.

In addition to the financial returns, by increasing postsecondary educational attainment Coloradans have a higher probability of finding a quality occupation that serves each job seeker's distinctive goals and aspirations in terms of a career of choice, family income, and wellbeing. Through innovative policies and initiatives, Colorado continues to work to provide postsecondary pathways that are affordable, economically viable, and overall beneficial for all learners.

Appendix A

Understanding the ROI dataset

The ROI dataset used in this report is created by linking CDHE’s Student Unit Record Data System (SURDS) dataset to Colorado Department of Labor and Employment’s (CDLE) Unemployment Insurance (UI) dataset through social security numbers (SSN). Although the dataset includes graduates from public institutions in Colorado, it excludes those meeting certain criteria: Graduates who do not have a social security number, who work outside of Colorado, who are federal employees or self-employed, or who do not meet the minimum wage threshold.

The ROI dataset has enabled Colorado to form a lasting partnership with the U.S. Census Bureau to spearhead a pilot project that involves nationwide degree completion datasets. The Postsecondary Employment Outcomes ([PSEO](#)) project leverages federal data linkages facilitated by the Census Bureau to provide national UI wage datasets on individuals who completed a degree program in Colorado, but who have left the state after graduation. This project allows Colorado to leverage an expanded data source to better inform students when they are making their education decisions.

An updated tool providing a full scope of the data utilized in this report can be accessed through the [Postsecondary Degree Earnings Outcomes Tool](#) on the CDHE website. Here, readers can utilize a wide range of across disaggregated populations within Colorado. This site will be updated on an annual basis to aid learners, researchers, and policymakers as new data is released.