



# **Achieving Gender Equity in Colorado Apprenticeships**

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## About Young Invincibles

Young Invincibles is a non-partisan, non-profit organization that works to expand economic opportunity for young adults ages 18 to 34 through policy analysis and advocacy. With offices in five states across the country and Washington, D.C., its research, organizing, and communications experts seek to elevate the voices of young people in top policy debates and provide solutions to major economic challenges for young adults.

## Acknowledgements

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## EXECUTIVE SUMMARY

Colorado is positioning itself as a national leader in apprenticeship programs. But to date, Colorado's apprenticeships have largely failed to employ women. Only six percent - or 317 - active Registered Apprentices (RAs) in Colorado are women.<sup>1</sup> Among active female RAs in Colorado, only 4 percent - or 14 women - are in what the state calls Tier 1 "Top Jobs" that pay a living wage for a family of three.<sup>2</sup> As a result, businesses are missing out on top talent and women are not connected to these high-growth, well-paying career pathways.

Young Invincibles (YI) analyzed data on RAs in Colorado from the U.S. Department of Labor's (USDOL) Registered Apprenticeship Partners Information Data System (RAPIDS); conducted focus groups with young women ages 16 to 34 in the Denver Metro Area<sup>3</sup> to find out what they knew about, and wanted from, apprenticeship programs; and researched best practices for creating equitable apprenticeships from other states. Notably, YI found that when Colorado women do start an RA program, they are more likely to complete than their male counterparts. Forty percent of female RAs who started between 2010-2015 have completed their program, compared to only 27 percent of male RAs.<sup>4</sup> Therefore, businesses looking to hire trained workers would benefit from enrolling more women in their apprenticeships.

Below are YI's top recommendations for Colorado to recruit more female apprentices.

- **Set a gender equity target** to reach gender parity in apprenticeship participation in Colorado over the next 15 years. This would result in women holding 45 percent of apprenticeship positions by 2034.<sup>5</sup>
- **Fund apprenticeship consultants** with expertise in diversity, equity, and inclusion (DEI) to support businesses offering RAs in high-paying, traditionally male-dominated fields with recruiting and retaining female apprentices.
- **Release disaggregated data annually** on who participates in RAs and non-registered apprenticeships in Colorado to track progress toward the state's gender equity target.
- **Increase access to quality, affordable child care** to support parents in apprenticeships and the workforce.
- **Employ best practices for recruiting women**, like including salary information in all apprenticeship marketing materials and expanding partnerships with community-based organizations that work with women.



## INTRODUCTION

Colorado's low unemployment rate<sup>6</sup> and strong economic growth rate<sup>7</sup> are promising - but only tell part of the story. Many Colorado employers are struggling to fill positions with local talent, hiring workers from outside of the state instead.<sup>8</sup> As new people move to Colorado, housing costs and the cost of living increase, putting economic pressure on low- and middle-income workers.<sup>9</sup> Unfortunately, wage growth is not keeping up with the growing cost of living,<sup>10</sup> and considerable wage gaps persist for women and people of color. White, non-Hispanic women in Colorado made 78 cents for every dollar white, non-Hispanic men made in 2016.<sup>11</sup> For black, Native American, and Latina women, the gender wage gaps were even greater, at 63 cents,<sup>12</sup> 58 cents,<sup>13</sup> and 54 cents<sup>14</sup> to every dollar, respectively.

According to the *2017 Colorado Talent Pipeline Report*, 67 percent of "Top Jobs" in Colorado - those projected to be in high demand and that pay a living wage - require some postsecondary education or training.<sup>15</sup> Pre-apprenticeship and Registered Apprenticeship (RA) programs increasingly provide valuable opportunities for young adults to secure employment in these high-demand industries that pay livable wages. According to the US Department of Labor (USDOL), "87 percent of apprentices are employed after completing their programs, with an average starting wage above \$50,000."<sup>16</sup> In addition to providing on-the-job experience, RAs are required to provide participants with mentorship, wage increases over the course of the program, and a nationally recognized credential. Notably, these wage increases must be the same for male and female apprentices; so connecting more women and people of color to RAs is a way to close those wage gaps and address income disparities for these groups.

This is a critical moment for action in Colorado. In the fall of 2016, the Colorado Department of Labor and Employment (CDLE) received a \$1.8 million grant from the USDOL to expand and improve apprenticeships in Colorado.<sup>17</sup> CDLE's initiative had two main components: support for an apprenticeships pilot for Denver Public Schools' (DPS) high school

### Definitions

- *Registered apprenticeships (RA) are administered by the USDOL. Participants are paid for their work-based training, receive incremental wage increases as their skills improve, and earn a nationally-recognized industry credential.*
- *Non-registered apprenticeships refer to a variety of formal and informal work-based learning arrangements that have not been certified by the USDOL. Non-registered apprenticeships could be paid or unpaid, and may or may not result in a nationally-recognized industry credential.*
- *Pre-apprenticeships train participants on the skills they need to enter and succeed in an RA.<sup>21</sup>*
- *Youth apprenticeships include pre-apprenticeships, RAs, and state-administered youth apprenticeships that specifically serve teens and young adults.<sup>22</sup> In 2016, Colorado established a statewide youth apprenticeship program in partnership with CareerWise Colorado.<sup>23</sup> CareerWise Colorado participants are paid, receive a nationally-recognized industry certification, and debt-free college credit.<sup>24</sup> Youth apprenticeships through CareerWise Colorado are currently open to high school juniors and seniors at participating schools.<sup>25</sup>*
- *Opportunity youth are young adults ages 16 to 24 who are not in school or working.<sup>26</sup> It is estimated that one in seven youth in Denver are opportunity youth.<sup>27</sup>*

## Definitions (cont.)

- *“Top Jobs” are defined in Colorado’s annual Talent Pipeline Report as the occupations in the state with “projected high annual openings (>40), above-average growth rates (>2.05%), and a good wage.”<sup>28</sup> The report divides the “Top Jobs” into two wage tiers.*
- *Tier 1 “Top Jobs” are “high-demand, high-growth jobs” in Colorado that “have median earnings at or above a living wage for a family with two adults (one working) and one child.”<sup>29</sup> For the 2017 Colorado Talent Pipeline Report, this was defined as median earning of at least \$24.19 an hour.<sup>30</sup>*
- *Tier 2 “Top Jobs” are “high-demand, high-growth jobs” in Colorado that “meet a living-wage benchmark for an individual.”<sup>31</sup> For the 2017 Colorado Talent Pipeline Report, this was defined as median earning of at least \$11.82 an hour.<sup>32</sup>*
- *Throughout the report, we use the term “apprenticeships” to refer to all of these apprenticeship strategies collectively and indicate where our recommendations are specific to one apprenticeship strategy only.*

students led by CareerWise Colorado, and assistance to apprenticeship providers in reaching out to groups traditionally left out of apprenticeships in top fields, including low-income adults, persons with disabilities, women, people of color, and opportunity youth. The state is being advised on these efforts by the Business and Experiential Learning (BEL) Commission and the Colorado Workforce Development Council (CWDC).

Colorado’s USDOL grant recognizes that Coloradans are not participating in apprenticeships - and benefitting from the living wage jobs they lead to - at an equal rate. In Colorado, just six percent of active RAs are women. In many of Colorado’s growing industries, like construction and information technology (IT), women remain underrepresented. Barriers like stereotypes, gender bias, industry climate, and a lack of support services like child care contribute to the low rate of female apprentices in many programs. In Top Jobs where women and people of color are underrepresented, workers in these populations may be missing out on opportunities for economic security and advancement, and industries may be missing out on top talent.

For this report, YI conducted focus groups with young women ages 16 to 35 to find out what they knew about,

and wanted included in, apprenticeship programs; performed stakeholder interviews with staff at government agencies and in the business community working to expand apprenticeships in Colorado; and researched best practices in creating an equitable apprenticeships from other states. Below are YI’s recommendations for steps that lawmakers, administrative agencies, and businesses can take to recruit and retain more women into RAs where they can earn a livable wage.

## DATA ON REGISTERED APPRENTICESHIPS IN COLORADO

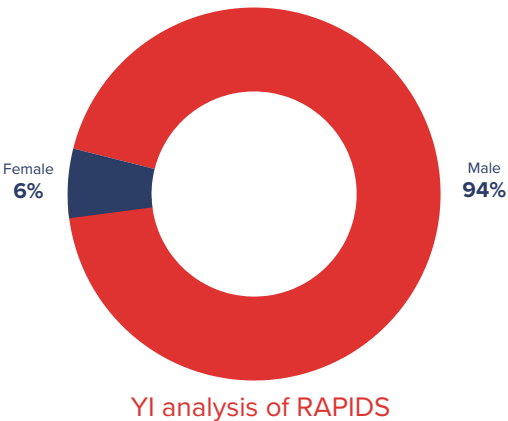
Before we can talk about what an equitable apprenticeship landscape in Colorado should look like, it is important to look at Colorado’s current apprenticeship landscape. The USDOL collects information on RAs in Colorado through the Registered Apprenticeship Partners Information Data System (RAPIDS). YI obtained and analyzed individual-level data from RAPIDS to learn more about who is participating in and completing RAs in Colorado, in what occupations, and how RAs are impacting wages. The data below is specific to RAs, as this is currently the only apprenticeship programming with publicly available data.

Only six percent - or 317 - active RAs in Colorado are women.<sup>33</sup> Among active female RAs in Colorado, only 4 percent - or 14 women in total - are in Tier 1 “Top Jobs” that pay a living wage for a family of three.<sup>34</sup> However, women who start an RA in Colorado are more likely to complete the program than their male counterparts. Female RAs who started between 2010-2015 in Colorado have a 40 percent completion rate, compared to just 27 percent for their male colleagues.

Demographics

Only six percent of active RAs are women (Figure 1), despite the fact that women make up about 45 percent of the labor force in Colorado.<sup>35</sup> The most common occupation titles for female RAs in Colorado are cosmetologist, interior electrician, hotel and restaurant cook, heavy construction equipment mechanic, and child care development specialist (see Appendix A for a full list). The most common occupation titles for male RAs in Colorado are all in the construction industry and skilled trades, namely interior electricians, plumbers, sheet metal workers, pipe fitters, and ironworkers (see Appendix B for a full list).

Fig. 1 – Active Colorado Apprentices by Gender, 2018



Looking at race alone, 82 percent of active apprentices in Colorado identify as white, seven percent are black, and three percent are American Indian or Native Alaskan (Figure 2).<sup>36</sup> In addition, among RA programs and participants that reported on ethnicity, 32 percent of active apprentices across all ethnicities are Hispanic (Figure 3).<sup>37</sup> There is a greater percentage of black people and Hispanic people in RAs in Colorado than in the labor force as a whole. Black people make up three percent and Hispanic people make up 16 percent of the state workforce.<sup>38</sup>

Fig. 2 – Active Colorado Apprenticeships by Race, 2018

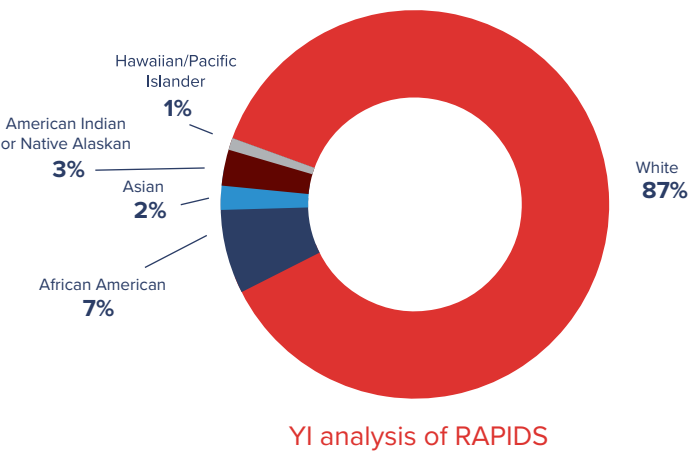
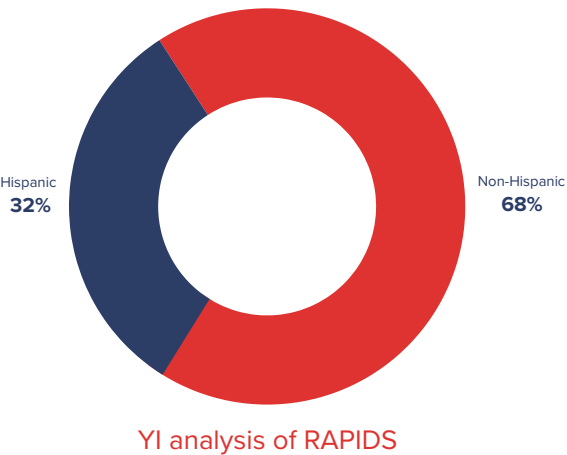


Fig. 3 – Active Colorado Apprentices by Ethnicity, 2018



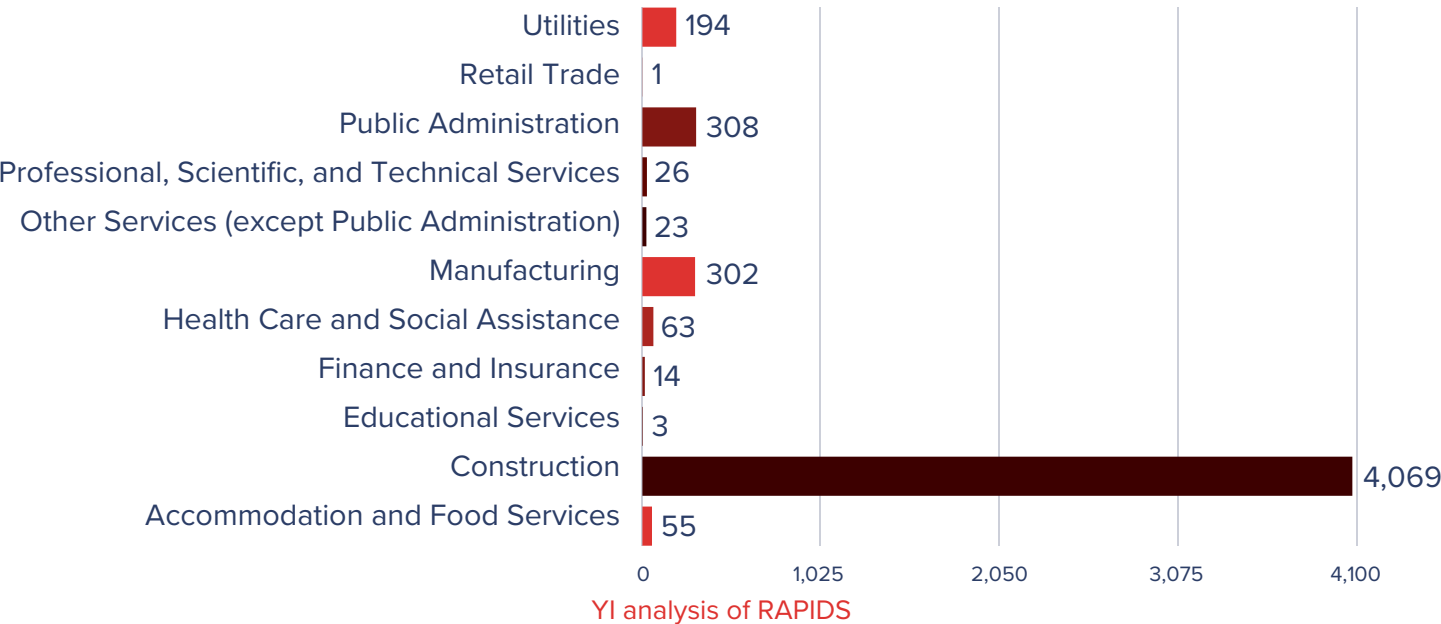
Industry Sectors

When looking at the labor market as a whole, more work could be done to connect women, Latinx people, and black people to the fastest-growing sectors in the state. Increasing the participation of these groups in RAs in growing sectors is one way to accomplish this goal.

Construction was the fastest-growing sector in Colorado based on the number of jobs from 2011 to 2016. Women are significantly underrepresented in construction, making up only 18 percent of workers in that sector.<sup>39</sup> Professional, scientific, and technical services was the second fast-growing sector during this time period, but Latinx and black workers are underrepresented in this field, making up eight and two percent of the workforce.<sup>40</sup> Notably, women were also underrepresented in the three of the six sectors with the largest increase in monthly wages from 2011 to 2016: transportation and warehousing; utilities; and agriculture, forestry, fishing, and hunting.<sup>41</sup>

Figure 4 shows the number of active RAs by sector in Colorado. The construction sector has the most RAs, followed by public administration, manufacturing, and utilities. Looking at the workforce as a whole, women are underrepresented in three out of four of the industry sectors with the largest number of RAs, with the exception of public administration.<sup>42</sup> By recruiting women and people of color for RAs in sectors with growing job openings and wages, businesses can not only build their talent pool but also increase equity in the labor market in our state.

Fig. 4 – Active Colorado Apprentices by Sector, 2018



Occupations

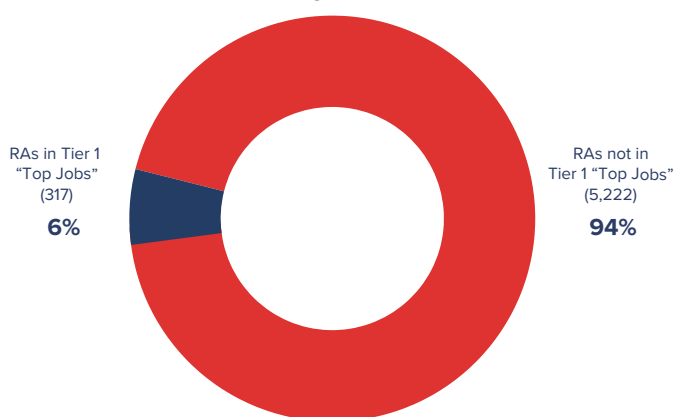
Starting in 2014 at the guidance of the state legislature, the CWDC began publishing the annual *Colorado Talent Pipeline Report*. The report uses labor market information to identify Colorado’s “Top Jobs,” or occupations that have “projected high annual openings (>40), above-average growth rates (>2.05%), and a good wage.”<sup>43</sup> The *Colorado Talent Pipeline Report* then divides these Top Jobs into two tiers: “jobs that have median earnings at or above a living wage for a family with two adults (one working) and one child” (Tier 1) and “jobs that meet a living-wage benchmark for an Individual” (Tier 2).<sup>44</sup>

Young Invincibles looked at the Tier 1 Top Jobs from 2017 to determine how many Top Jobs had RA pathways, and how many RA programs and apprentices were in pursuit of Top Jobs in the state.<sup>45</sup> We chose to focus on Tier 1 occupations for this report because more than 60 percent of mothers in Colorado are working to help support a family,<sup>46</sup> and consequently need a job that pays more than the living wage for an individual. (Charts depicting RAs in Tier 2 Top Jobs can be found in Appendix C of this report.)

The *2017 Colorado Talent Pipeline Report* shows that five of the 2017 Tier 1 Top Jobs that require less than a Bachelor's Degree had RA programs to recruit and train new talent, while 11 did not.<sup>47</sup> The Report states that two additional jobs in this category are recognized as "apprenticeable" by USDOL.<sup>48</sup> However, just because USDOL does not currently recognize a job as apprenticeable does not mean an RA could not be created for that job. For example, according to the *2017 Colorado Talent Pipeline Report*, USDOL does not recognize web developer as apprenticeable.<sup>49</sup> However, Techtonic Group in Boulder, CO recently created an RA for software developers - an occupation that involves similar skills as web developers and can include developing software for the web. By working with businesses hiring for these Top Jobs to set up or expand RA programs, Colorado's Sector Partnerships could increase the number of people going into these top fields.

The majority of RAs in Colorado are not pursuing Tier 1 Top Jobs, with only 6 percent - or 317 - of active RAs working in a Tier 1 Top Job (Figure 5).<sup>50</sup> Among the 6 percent of RAs pursuing Tier 1 Top Jobs, only 4 percent - or just 14 active RAs - are women (Figure 6).<sup>51</sup>

**Fig. 5 – Active Colorado Apprentices in Tier 1 "Top Jobs", 2018**



YI analysis of RAPIDS

**Fig. 6 – Active Colorado Apprentices in Tier 1 "Top Jobs" by Gender, 2018**



YI analysis of RAPIDS

People of color fare better than women when it comes to pursuing RAs in Tier 1 Top Jobs in the state. The percent of black apprentices pursuing Tier 1 Top Jobs (2 percent)<sup>52</sup> is similar to the percentage of black people in the labor force (3 percent) (Figure 7),<sup>53</sup> but lower than the percentage of black RAs (7 percent).<sup>54</sup> There is a higher percentage of Hispanic RAs pursuing Tier 1 Top Jobs (23 percent)<sup>55</sup> than the percentage of Hispanic people in the labor force (16 percent)<sup>56</sup>; however, this number is lower than the percentage of Hispanic people in RAs as a whole (32 percent) (Figure 8).<sup>57</sup>



Fig. 7 – Active Colorado Apprenticeships  
in Tier 1 Jobs by Race, 2018

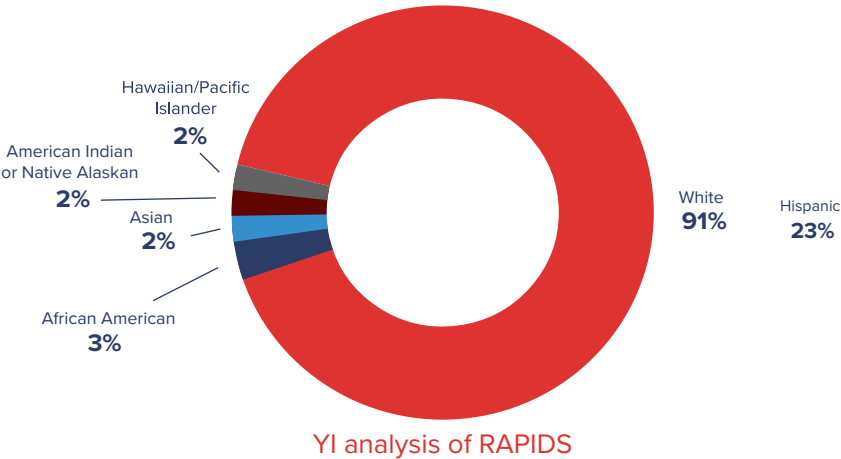
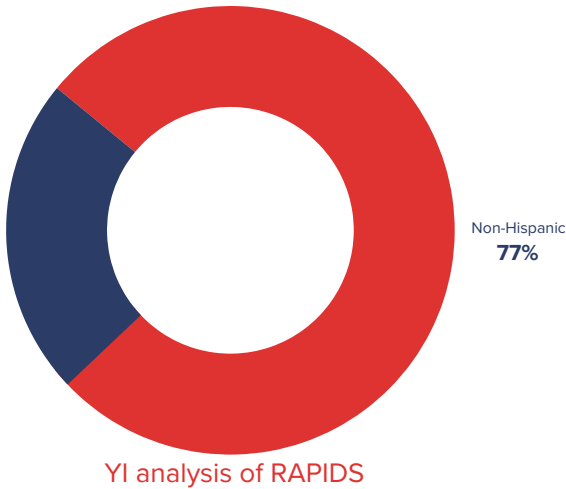


Fig. 8 – Active Colorado Apprentices  
in Tier 1 “Top Jobs” by Ethnicity, 2018



Completion Rates

YI looked at completion rates for Colorado RAs by gender, race, and ethnicity. Table 1 shows the current status of RAs that registered between January 1, 2010, and December 31, 2015. This table should be interpreted as 12,758 apprentices registered in Colorado between 2010 and 2015, and 3,568 had completed by August 2018.<sup>58</sup> This is not the same as the official completion rate as laid out by USDOL, because we do not have the variable for the date of completion. However, based on the available information, female RAs in Colorado have a significantly higher completion rate - 40 percent - than their male counterparts - 27 percent.<sup>59</sup> This statistic should help incentivize businesses who want to hire and retain their apprentices to recruit more women because women are more likely to complete an RA program.

Table 1: Colorado Apprenticeship Completion Rate by Gender, 2013 – 2018

	All	Male	Female
Canceled	7,967	7,477	490
Completed	3,568	3,220	348
Registered	1,144	1,121	23
Reinstated	75	72	3
Suspended	2	2	-
“DL”	2	2	-
Completion Rate	28%	27%	40%

Wages

Finally, YI sought to look at the impact of completing an RA on a person’s wages. Wages are difficult to measure in RAPIDS. Employers can enter wages as monthly, yearly, or weekly, but our abstract lacks that variable indicating the level of compensation. For this analysis, YI removed all records with no wage information or starting and exit wages less than 5, with the logic that 5 reflects an hourly wage of \$5. We then looked at the percent change from the starting to the exit wage for RAs who completed their program. We found that across all RAs in Colorado, RAs who completed their program could expect a 43.3 percent increase in their wages from the beginning to the end of the program.<sup>60</sup>

## FEEDBACK FROM COLORADO WOMEN

In 2018, YI held focus groups with young women ages 16 to 35 to identify misconceptions, messaging gaps, and other challenges that may be keeping young women from pursuing or completing RAs in Colorado. We recruited two populations for our focus groups: young women who have not done an RA, including opportunity youth and young women of color, and women who were participating in or completed an RA.

### Young Women Without RA Experience

YI found that the majority of female focus group participants who had not done an apprenticeship did not know what an RA was or what RA opportunities were available in Colorado. When they learned more about RAs - particularly that they could get paid for their participation - many expressed interest in this type of work-based learning model. When asked what would be important to them in an RA, participants cited the ability to earn a livable wage, get course credit, and receive mentorship. Participants cited support accessing child care, housing, and transportation as things that would help them participate in an RA.



### FOCUS GROUP DEMOGRAPHICS

YI held focus group discussions with 32 young women ages 16 to 35 in the Denver Metro Area. The average age of the young women with whom we spoke who had not completed an RA was 20.6 years old and the average age of the current and former RAs with whom we spoke was 27.3 years old. Seventy-seven percent of the women in our focus groups who shared their race or ethnicity were women of color. Because our focus groups participants primarily lived in urban and suburban areas, we recommend stakeholders hold additional conversations with women in rural areas to assess the unique opportunities and challenges around apprenticeships that rural women in Colorado face.

Most participants did not know what an RA was or anyone else participating in an RA. Some of them thought it was an internship or job shadowing experience where you had the opportunity to learn more about a profession. Some thought RAs were paid, while others thought they were unpaid like an internship.

Since many of the participants were unfamiliar with apprenticeships in general, they were not sure what kind of professions were involved in RAs. When asked what type of professions they thought offered RAs, participants mentioned construction, trades, barbering and beauticians, and health care professions. Many participants said they would be interested in an RA that fit their career interests, which included such diverse fields as real estate, business, fashion, criminal justice, legal, health care, communications, marketing, dance, performing arts, pharmacy, and information technology.

Several of the participants said they had not considered an RA due to the lack of advertising and information about what RAs are and what types of programs are available. A few participants mentioned wanting or wishing someone had come to their high school to talk about RAs. Participants recommended that marketing materials for RAs should include the salary, job description, program length, and information on the company. Several also had questions about what qualifications they needed to start an RA and what the application process was like.

Participants were split on how the relative gender or racial and ethnic diversity of an industry would impact their decision to participate in an RA. Many participants said they would not want to be the only woman or person of color in an RA or company. They preferred work environments where other women or people of color were present because it made them feel more comfortable and accepted. A few of the participants had uncomfortable experiences in the past navigating male-dominated spaces (“boys’ clubs”) because they felt like they were treated differently and inferiorly. However, some participants said they would be motivated to join a profession or company with the knowledge that they would be one of the only women or people of color in that field. They liked the idea of breaking down that barrier and proving themselves in this type of space.

When asked to describe their ideal apprenticeship, participants provided a variety of responses. Some said they would want to work full-time with classes at night, while others preferred to work part time and take classes part time. Participants said they would be interested in apprenticeships lasting anywhere from one to five years, with more stating a preference for shorter programs. Nearly all participants said getting paid a livable wage was key when they thought about their ideal apprenticeship.

## **Female Registered Apprentices**

YI interviewed women in RAs in industries with both low (e.g. construction) and high concentrations (e.g. cosmetology) of women in Colorado. Most women learned about their RA through word of mouth. The top reasons focus group participants said they chose an RA over other education or career opportunities were: being able to earn while they learned, the hands-on nature of the training, being able to build their professional networks or clientele while learning, and the flexibility afforded by their RA programs. Participants said the quality of their mentor made a big difference in their RA experience. Finally, female RAs in male-dominated industries said they experienced harassment and had to prove their abilities to be treated respectfully by male colleagues.

Most of the current and former female RAs we spoke to learned about their RA through word of mouth from a family member, friend, or colleague who previously went through their program. One participant mentioned learning about her RA through an Internet search. Participants said that wages were important to them in selecting an RA, along with the availability of jobs in a particular field.

Some participants had pursued or completed a degree in another field before starting their RA. One participant said that the teaching style and pace of “traditional” college was not a good fit for her, which is why she switched to an RA. Another struggled to find a job that she enjoyed with her college degree. Overall, participants identified as hands-on learners and liked the cohort learning model in their RAs. Participants liked being able to learn different techniques from the different instructors and apprentices in their cohort, and pick the techniques that worked best for them. Participants also said the quality of their mentor made a big difference in their experience. RAs appreciated mentors who let them work alongside them or took the time to teach them new techniques.

Focus group participants cited flexibility as a benefit and a challenge of their RA. Many participants liked that they could set their own pace if they picked up certain skills faster or slower than others in their program. However, others said it was important to be self-motivated and practice time management skills to stay on track in their program. Some RAs said the structure of their program and the timing of their classes was challenging - many participants worked full-time and took their classes at night. Several participants said access to child care, particularly during night classes, was a challenge for parents; one RA shared that some of her classmates have to bring their children to class. One participant who drove four hours for her apprenticeship classes said there need to be more RAs for people living in rural parts of the state.

Female RAs in male-dominated industries liked their jobs but faced challenges as a part of the minority in their industry. While participants mentioned having positive relationships with several of their male colleagues, they also said they needed to stand up for and “prove” themselves in order to be treated with respect on the job. One participant said it was especially difficult to get respect as a female foreman, and said she had to report someone for sexual harassment. Another participant who worked in a shop run by two women said that helped her feel more represented in the field. Finally, one participant noted that while there were more men than women in her cohort, the women had better attendance than the men. All in all, participants expressed a desire to see more women pursue RAs and work in industries like construction, because of the skills women can bring to these professions and economic opportunities the industry provides.

## RECOMMENDATIONS

The Colorado General Assembly, state agencies, sector partnerships, schools, and businesses all have roles to play in achieving gender equity in apprenticeship participation. Hiring more women through apprenticeships will help ensure Colorado has enough skilled workers to fill in-demand positions and meet our state’s economic needs. And ensuring women benefit from high-growth, well-paying career pathways through apprenticeship is key to increasing the number of women and families in Colorado earning livable wages, which has economic benefits for families, business, and the state.

YI recommends the following actions to achieve gender equity in apprenticeships:

- **Set a gender equity target** to reach gender parity in apprenticeship participation in Colorado over the next 15 years. This would result in women holding 45 percent of apprenticeship positions by 2034.<sup>61</sup>
- **Fund apprenticeship consultants** with expertise in diversity, equity, and inclusion (DEI) to support businesses offering RAs in high-paying, traditionally male-dominated fields with recruiting and retaining female apprentices.
- **Release disaggregated data annually** on who participates in RAs and non-registered apprenticeships in Colorado to track progress toward the state’s gender equity target.
- **Increase access to quality, affordable child care** to support parents in apprenticeships and the workforce.
- **Employ best practices for recruiting women**, like including salary information in all apprenticeship marketing materials and expanding partnerships with community-based organizations that work with women.



We indicate below whether the legislature, a state agency, businesses, institutions, or some a combination of these entities could implement the recommendation. For example, we recommend the legislature appropriate fundings for apprenticeship consultants with expertise in diversity, equity, and inclusion (DEI), but a business interested in recruiting and retaining more female apprenticeships could also hire and work with a DEI consultant on its own.

## **Gender Equity Target**

To become a leader in apprenticeship equity, the Colorado Department of Labor and Employment (CDLE) should set a clear target for gender equity in apprenticeship participation, coupled with the resources and information to reach that target. Colorado should commit to reaching gender parity in apprenticeship participation in 15 years. This would result in women holding 45 percent of apprenticeship positions by 2034, on par with their participation in the workforce.<sup>62</sup> This target should apply across all RAs and youth apprenticeships through CareerWise Colorado and could be expanded to include all paid apprenticeships in the state. Participation by women in unpaid apprenticeships should not count toward the equity target.

RA programs, cities, and states have been able to move the needle on gender and racial equity in apprenticeship participation by setting and tracking numeric goals.<sup>63</sup> For example, a sheet metal apprenticeship program in New York with three percent female apprentices in 2011 committed to hiring 20 percent women apprentices by 2020, and successfully reached 16 percent in the 2017 cohort.<sup>64</sup> For decades, the City of Boston has required that city-funded construction projects have 10 percent of workforce hours going to women.<sup>65</sup> Oregon set numeric targets for the percent of white women, women of color, and men of color in apprenticeships in highway construction trades, and had met their targets for two out of the three groups by 2014-15.<sup>66</sup>

Colorado can reach gender equity by both developing new apprenticeship programs in fields that employ large numbers of women, and improving the gender diversity of fields where women are underrepresented. South Carolina went from ten percent to 33 percent participation for female apprentices in nine years, largely due to adding registered apprenticeships in the health care field.<sup>67</sup> In July 2018, USDOL released a new federal funding opportunity to help states expand apprenticeships to new sectors and reach traditionally underrepresented groups like women and people of color.<sup>68</sup> Colorado is applying for funding to create new health care apprenticeships under this funding opportunity. YI supports efforts like this.

In addition, it is critical that Colorado amp up efforts to increase gender diversity in the most in-demand jobs in our state that pay a livable wage. Five out of the six Tier 1 Top Jobs that currently offer RAs in Colorado are in traditionally male-dominated occupations.<sup>69</sup> Examples from other state provide some guidance. For instance, Oregon increased the percentage of women and people of color both entering and completing apprenticeships in highway construction in a decade by improving recruitment methods, tracking discrimination on the job, and providing wraparound supports.<sup>70</sup> Massachusetts increased the number of female apprentices overall by 141 percent between 2012 and 2015 by tracking diversity and creating commissions that helped construction apprenticeship programs improve their inclusion practices.<sup>71</sup>

Achieving gender equity apprenticeships in Colorado not only means increasing the percentage of female apprentices, but also the percentage of women pursuing apprenticeships in Tier 1 Top Jobs with the highest pay. As stated above, 83 percent Tier 1 Top Jobs with active RAs are in male-dominated occupations.<sup>72</sup> Additionally, in YI's focus groups, every female RA in a male-dominated job said they experienced workplace discrimination. The Colorado General Assembly should help address these problems by allocating funding for apprenticeship consultants with expertise in diversity, equity, and inclusion (DEI) to support businesses offering RAs in high-paying, traditionally male-dominated fields with recruiting and retaining female apprentices.

## **Apprenticeship Consultants**

In Colorado, the Business Experiential-Learning (BEL) Commission, sector partnerships, and CareerWise Colorado all provide valuable, general technical expertise to businesses and schools around creating and growing apprenticeships. However, some of these bodies lack female representation. For example, only two of the 16 BEL Commission Members are women.<sup>73</sup> Additionally, the quantitative data on the percent of women in RAs and qualitative feedback from YI's focus groups suggests that Colorado needs increased and intentional expertise around DEI to achieve gender equity in apprenticeship programs.

YI recommends the General Assembly fund a team of apprenticeship consultants who are DEI experts to help businesses and the state develop strategies for recruiting and retaining women, creating inclusive workplaces, and improving mentorship skills. Consultants should offer group trainings and one-on-one support to apprenticeship sponsors and mentors on best practices in supporting women and people of color. The trainings should address recruitment and hiring practices, providing adequate workplace facilities, data-driven evaluation and promotion practices, workplace discrimination, and creating inclusive workplaces that minimize instances of apprentices feeling isolated. Participants in YI's focus groups said that the quality of their mentorship made a big difference in their RA experience; providing mentors with training on how to respond to challenges faced by apprentices who are the minority in their industry could improve apprenticeship outcomes. The consultants should also engage with the BEL Commission and sector partnerships as those entities continue to come up with ways to expand apprenticeships. The consultants could be assigned to different industry sectors or regions of the state. South Carolina increased the total number of apprenticeships in their state thirty-six fold over 11 years with a \$1 million annual budget that included six apprenticeship consultants.<sup>74</sup>

## **Publicly Available Data**

Colorado should publish consumer-friendly, disaggregated data on apprenticeship participation annually to track progress toward the state's gender equity goal. To achieve this, the General Assembly should authorize funding annually for two state agency staff to analyze and publish the data, and work on improvement plans with employers based on this information.

Colorado should start by analyzing and publishing the data that is currently available (by request) on RAs and youth apprenticeships from USDOL and CareerWise Colorado. Colorado should add data on non-registered apprenticeships when this information becomes available from USDOL (slated to create a tracking tool by September 30, 2019).<sup>75</sup> The disaggregated data should include information on apprentice occupations, completion rates, and wage growth by demographic whenever available.

Additionally, Colorado could take a proactive approach to collecting data on non-registered apprenticeships ahead of USDOL's target data. One way of doing this would be to set up a state certification system for apprenticeships, and require apprenticeship programs to submit disaggregated data annually as part of their certification. In July 2018, USDOL released a Training and Employment Notice announcing a forthcoming opportunity for organizations, including states, to apply to be certifiers of a new category of apprenticeships called Industry-recognized Apprenticeship Programs (IRAP).<sup>76</sup> If Colorado applied to be an IRAP certifier, the state could collect demographic data on the programs it certifies and provide regular DEI trainings for IRAP sponsors. To incentivize programs to seek certification, the General Assembly could provide a small tax credit or grant to businesses that are part of the state's IRAP.

## Child Care

All stakeholders, including the General Assembly, state agencies, businesses, schools, and community groups should work together to increase the number and accessibility of quality child care providers in Colorado. Government entities can do this by building on current Two-Generation (2Gen) Approaches to serving families, and expanding opportunities to use federal funding like the Temporary Assistance for Needy Families (TANF) block grant to support child care. Businesses, schools, and community organizations can support working parents by providing on-site child care, investing in child care programs through philanthropy, and advocating for policies that would increase the number of quality, affordable child care providers.

Access to quality, affordable child care helps women, particularly single mothers, succeed in education and the workforce.<sup>77</sup> Twenty-seven percent of Colorado children live in a single-parent household,<sup>78</sup> and 30 percent of families headed by a single mother in Colorado live below the poverty line.<sup>79</sup> By increasing women's workforce participation, access to quality child care improves economic outcomes for families and contributes to economic growth.<sup>80</sup>

YI's focus group participants said increased access to child care would help them or women they knew to complete an RA. Participants emphasized the difficulty of finding quality, affordable child care providers, particularly during night classes. Unfortunately, data support these observations. Thirty percent of Coloradans live in child care deserts, with lower-income people more likely to live in a child care desert than people with above-average incomes.<sup>81</sup> The Center for American Progress found that "[i]n Colorado, the maternal labor force participation rate in child care deserts is 3.4 percentage points lower than it is in neighborhoods with adequate licensed child care."<sup>82</sup>

To address the economic challenges facing families, Governor John Hickenlooper's administration has focused on building more 2Gen policies and programs that "[address the] needs of both children and the adults in their lives together."<sup>83</sup> Under 2Gen, not only can investing in child care increase participation in apprenticeships, but apprenticeships can also be used as a tool to increase the number of child care providers. In 2017, Colorado released a three-year work plan focused on growing the state's early childhood workforce (the Early Childhood Workforce 2020 Plan).<sup>84</sup> The plan includes, among other recommendations, creating an apprenticeship program in early childhood education (ECE) to help meet the state's need for child care providers.<sup>85</sup> In another local example, Mesa County Public Health is using grant funding from the state to create child care business cooperatives, increase provider pay, and create an ECE career pathway.<sup>86</sup> And most recently, the Colorado Department of Human Services (CDHS) published a funding opportunity in August 2018 (2GO Pilot) for local

coalitions to pilot new 2Gen projects, including projects focused on expanding the availability of child care, to support family economic security.<sup>87</sup> Colorado's next Governor should continue to support state and local efforts to increase the number of quality child care providers and integrate 2Gen approaches across government agencies.

One of the funding streams CDHS is using to support local 2Gen efforts through the 2GO Pilot is the TANF block grant.<sup>88</sup> Currently, Colorado only spends 29 percent of its TANF dollars on the "core welfare reform activities" of cash assistance, work supports, and child care.<sup>89</sup> Additionally, Colorado's share of its TANF dollars going to child care has steadily decreased from 15 percent in 2001 to 4 percent in 2016, well below the national average of 17 percent.<sup>90</sup> Meanwhile, the state has built up \$107 million in its long-term TANF reserves.<sup>91</sup> The Colorado General Assembly should examine how to increase the amount of TANF funding it uses to provide child care for people in job-training programs like apprenticeships.

For example, the National Skills Coalition recently profiled a pre-apprenticeship program in Mississippi, WinC, that used money from the state's TANF program and another federal grant to help participants and graduates find and pay for child care after Mississippi severely restricted general child care assistance.<sup>92</sup> Enrollment in WinC almost tripled - from nearly 60 women to about 180 women per year - since the start of the program in 2016.<sup>93</sup>

Businesses, schools, and community organizations also have roles to play in expanding access to child care for parents in apprenticeship programs. These types of groups, alone or in collaboration, can apply for state, federal, or private funding to create on-site child care centers for apprentices or training programs for child care providers in areas where there are provider shortages. The U.S. Chamber of Commerce Foundation released a report in 2017 highlighting the importance of high-quality child care in building a strong workforce, now and for the next generation.<sup>94</sup> The report recommended, among other strategies, that businesses with philanthropic arms to donate to child care programs and initiatives.<sup>95</sup> Businesses and higher education institutions can also donate or raise money to create scholarships for people pursuing certificates or degrees in early childhood education, and stand with community organizations in advocating for statewide policies that increase the number of high-quality child care providers.

## **Recruitment**

State agencies, businesses, schools, and community groups can also work together to recruit more women in RAs in Colorado. Apprenticeship programs should employ best practices for recruiting women and people of color, including increasing in-person outreach, providing opportunities for people to explore "non-traditional" fields, and including salary information in all marketing materials. And businesses and schools with apprenticeships should expand partnerships with community-based organizations to recruit more women and people of color into their programs.

Several young women who participated in YI's focus groups in Colorado said they had not considered an RA due to the lack of advertising and information about what RAs are, and what types of programs are available to them. Therefore, stakeholders should continue their efforts to inform more young adults, particularly young women, about the education and career opportunities they can get through an apprenticeship.

There is extensive research on best practices in leading marketing campaigns that resonate with women and people of color.



For example, Chicago Women in Trades has found a range of key practices, including conducting in-person outreach,<sup>96</sup> using diverse images (including pictures of women and people of color), and language (noting that you are looking for women and people of color).<sup>97</sup> YI's research on apprenticeships in Illinois also found that if the sector is non-traditional or commonly misunderstood, employers should create opportunities for the general population to learn about the field. For example, the Manufacturing Renaissance has a manufacturing pre-apprenticeship program on the South Side of Chicago. Several young women at the high school reported being interested in the program only after they toured the company and saw firsthand the nature of manufacturing work.<sup>98</sup> Similarly, one union developed a workshop designed to introduce African Americans to the electrical trades.<sup>99</sup> The workshop flyers targeted either African-American men or women and included images and language that reflected the target audiences and highlighted the field's high pay.<sup>100</sup> They distributed flyers to African-American community institutions like churches.<sup>101</sup> This workshop series increased the apprenticeship program's diversity, with women now holding 13 percent of apprenticeship positions and people of color holding 22 percent of positions.<sup>102</sup>

Participants in one of YI's focus groups had the opportunity to view and provide feedback on Colorado's new website for apprenticeships, [www.ApprenticeshipEvolution.com](http://www.ApprenticeshipEvolution.com). They reported liking the use of video on the website and the ease of navigation from the homepage. However, participants wanted to see more information - particularly salary information - about the apprenticeship programs listed under the "Program" drop-down menu.<sup>103</sup> For each RA, participants wanted to know about the wages, see a description of the job, and a brief summary or link to more information on the business or other entity sponsoring the RA.

In addition to online marketing materials that include salary information, word of mouth remains an important recruitment strategy for RAs. Most of the current and former female RAs YI spoke to through our focus groups in Colorado learned about their RA through word of mouth from someone who previously went through the program. Several focus group participants who had not done an RA expressed interest in having someone come and speak to their school or group in person about RA opportunities. Stakeholders can recruit more women for apprenticeship programs by building partnerships with community-based organizations that serve women and presenting on the opportunities they have to those groups.

## CONCLUSION

Colorado is positioning itself as a national leader on apprenticeship programs. To truly be successful, though, the state and businesses need to get the most talented people for the jobs into their talent pipelines. Colorado will only achieve this by ensuring women as well as men know about, and are able to participate in, apprenticeship programs. In addition, pursuing apprenticeships in top-paying, high-demand Tier 1 "Top Jobs" will help more women in Colorado earn a livable wage for themselves and their families.

## APPENDIX A - FEMALE ACTIVE COLORADO APPRENTICES BY OCCUPATION, 2018, IN OCCUPATIONS WITH 10 OR MORE FEMALE APPRENTICES

Occupation Title	Count of Female Active Apprenticeships
Cosmetologist	750
Electrician (Alternate Title: Interior Electrician)	504
Cook (Hotel & Restaurant)	388
Operating Engineer (Alternate Title: Heavy Construction Equipment Mechanic)	172
Child Care Development Specialist	154
Animal Trainer	132
Teller (Financial)	123
Hair Stylist (Existing Title: Cosmetologist)	111
Barber	109
Direct Support Specialist	102
Correction Officer	102
Home Health Technician	98
Plumber	83
Pipe Fitter (Construction)	75
Construction Craft Laborer	71
Structural Steel Worker (Alternate Titles: Ironworker Or Structural Ironworker)	60
Housekeeper, Com, Res, Ind	56
Computer-peripheral-equipment-op	54
Carpenter	53
Sheet Metal Worker	45
Maint Mechanic (Any Ind) (Alternate Title: Industrial Maintenance Mechanic)	45
Horticulturist	33
Electronics Technician	31
Carpenter, Maintenance	28
Painter (Const)	28
Boilermaker I	25
Dry-wall Applicator (Alternate Title: Drywall Applicator Specialist)	24
Landscape Management Technician	24
Farm Worker, General I	23
Power-plant Operator	22
Medical Assistant	22

Manager, Food Service	22
Fabricator-assembler Metal Prod	19
Maintenance Repairer, Build	18
Information Technology Specialist (Cb)	18
Street-light Servicer	18
Electric Meter Repairer	18
Floral Designer	17
Composite Plastic Fabricator (Existing Title: Insulation Worker)	16
Elevator Constructor (Alternate Title: Elevator Constructor Mechanic)	15
Taper (Alternate Title: Drywall Finisher)	14
Roofer	12
Police Officer (Alternate Title: Military Police)	11
Nurse Assistant	10
Computer Operator	10

## APPENDIX B - MALE ACTIVE COLORADO APPRENTICES BY OCCUPATION, 2018, IN OCCUPATIONS WITH 10 OR MORE MALE APPRENTICES

Occupation Title	Count of Male Active Apprenticeships
Electrician (Alternate Title: Interior Electrician)	14,961
Plumber	3,314
Sheet Metal Worker	2,400
Pipe Fitter (Construction)	2,187
Structural Steel Worker (Alternate Titles: Ironworker Or Structural Ironworker)	2,011
Carpenter	1,532
Operating Engineer (Alternate Title: Heavy Construction Equipment Mechanic)	1,513
Cook (Hotel & Restaurant)	985
Housekeeper, Com, Res, Ind	918
Dry-wall Applicator (Alternate Title: Drywall Applicator Specialist)	848
Line Repairer	845
Roofer	823
Elevator Constructor (Alternate Title: Elevator Constructor Mechanic)	760
Line Installer-repairer	611
Correction Officer	600

Animal Trainer	477
Glazier	457
Construction Craft Laborer	361
Maint Mechanic (Any Ind) (Alternate Title: Industrial Maintenance Mechanic)	353
Electrician, Substation	352
Fire Medic	289
Bricklayer (Construction)	283
Gas-main Fitter	275
Power-plant Operator	267
Composite Plastic Fabricator (Existing Title: Insulation Worker)	246
Gas Utility Worker	241
Boilermaker I	240
Line Erector (Power-line Distribution Erector)	239
Street-light Servicer	226
Painter (Const)	214
Cook (Any Ind) (Alternate Title: Nutrition Care Specialist)	211
Police Officer (Alternate Title: Military Police)	207
Millwright	206
Floor Layer	196
Line Maintainer (Alternate Title: High Voltage Electrician)	195
Cabinetmaker	162
Heating & Air-conditioner Install/Ser	159
Computer Operator	145
Powerhouse Mechanic	133
Cement Mason	131
Electronics Technician	131
Sprinkler Fitter (Existing Title: Pipe Fitter)	129
Office Manager/Admin Services	116
Fire Fighter Specialist Wildland	110
Welder, Combination	105
Telecommunications Technician (Alternate Title: Broadband Technician)	98
Electrician, Maintenance	98
Electric Meter Repairer	92
Baker (Bake Produce)	87
Residential Wireman	83
Fire Fighter	80
Substation Operator	79



Reinforcing Metal Worker (Alternate Title: Ironworker Reinforcing Concrete)	78
Cosmetologist	70
Horticulturist	69
Barber	68
Machinist (Alternate Title: Precision Machinist)	65
Taper (Alternate Title: Drywall Finisher)	60
Computer-peripheral-equipment-op	54
Automobile Body Repairer	54
Manager, Food Service	50
Switchboard Operator (Utility)	47
Graphic Designer	47
Dry-wall Applicator	47
Gas-regulator Repairer	46
Shop Tailor	46
Electric-distribution Checker	43
Welder-fitter	36
Information Technology Specialist (Cb)	36
Electrical Technician	36
Telecommunications Technician (Alternate Title: Broadband Technician)	36
Fish Hatchery Worker	35
Laundry-machine Mechanic	34
Mold Maker, Die-cast & Plaster	33
Instrument Technician (Utilities)	32
Electrician, Powerhouse	29
Hair Stylist (Existing Title: Cosmetologist)	28
Fabricator-assembler Metal Prod	27
Heating, Ventilation, Air Conditioning (Ex. Tit: Heating & Air Cond. Inst/Ser)	27
Maintenance Repairer, Build	27
Transportation Clerk (Alternate Title: Transportation Management Coordinator)	26
Dairy Technologist	24
Electronics Mechanic	23
Drafter, Architectural	23
Customer Service Represent	22
Automobile Mechanic (Alternate Title: Light-wheel Vehicle Mechanic)	20
Drafter, Mechanical	20
Lay-out Worker I (Any Ind)	20
Plasterer	19

Landscape Management Technician	19
Teller (Financial)	19
Service Planner (Light, Heat)	18
Internetworking Technician	18
Upholsterer, Inside	17
Floral Designer	17
Direct Support Specialist	16
Tool And Die Maker	16
Computer Programmer	16
Refrigeration Mechanic (Any Ind)	16
Facilities Locator	15
Quality Control Inspector	14
Carpenter, Maintenance	14
Automotive Technician Specialist (Alternate Title: Light-weight Vehicle Mech)	13
Laboratory Technician	13
Meter Repairer (Any Ind)	12
Child Care Development Specialist	12
Furniture Finisher	12
Maintenance Repairer, Industrial	12
Wastewater-treatment- Plant Operator (Alternate Title: Water Treatment Specialist )	12
Cook, Pastry (Hotel & Restaurant)	11
Horse Trainer	11
Operating Engineer	10
Dispatcher, Service (Alternate Title: Transportation Management Coordinator)	10

APPENDIX C - REGISTERED APPRENTICES IN  
TIER 2 “TOP JOBS” IN COLORADO

Fig. 9 – Active Colorado Apprentices  
in Tier 2 “Top Jobs”, 2018

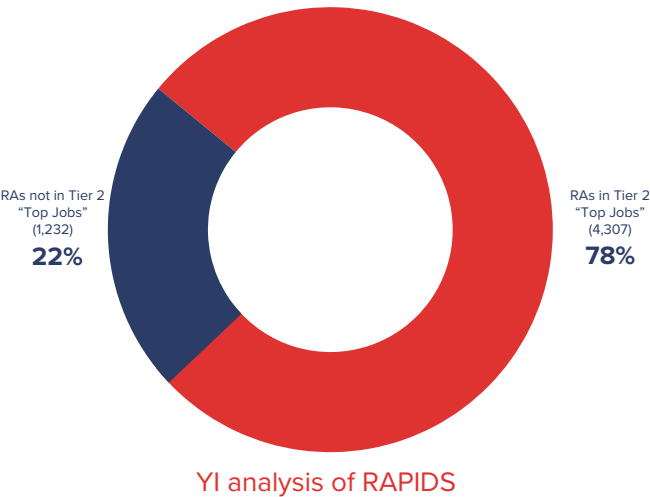
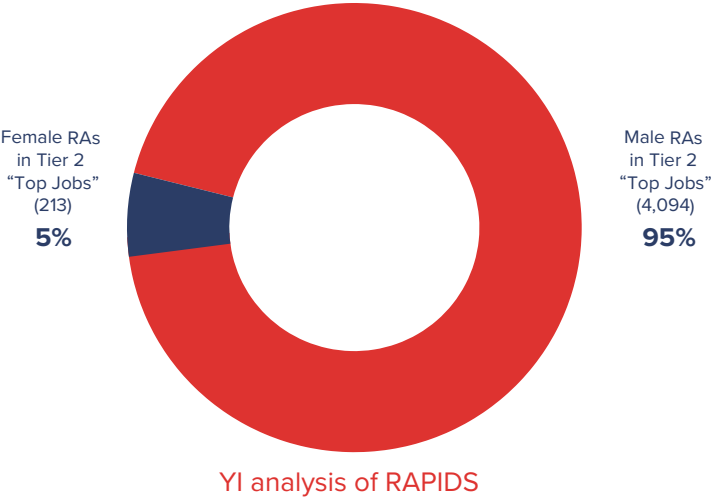


Fig. 10 – Active Colorado Apprentices  
in Tier 2 “Top Jobs” by Gender, 2018



## END NOTES

1. YI's analysis of the U.S. Department of Labor's (USDOL) Registered Apprenticeship Partners Information Data System (RAPIDS). Hispanic and black people are overrepresented in RAs in Colorado compared to their representation in the state workforce, which is why we have chosen to focus on gender here.
2. YI's analysis of RAPIDS and the Colorado Workforce Development Council's (CWDC) *2017 Colorado Talent Pipeline Report* (Denver: Colorado Dept. of Labor and Employment [CDLE]), [https://www.colorado.gov/pacific/sites/default/files/2017\\_Talent\\_Pipeline\\_Report\\_WEB.pdf](https://www.colorado.gov/pacific/sites/default/files/2017_Talent_Pipeline_Report_WEB.pdf). We focus on Tier 1 occupations because 62 percent of Colorado mothers are working to support their family. Ryan Erickson and Danielle Corley, *Fast Facts: Economic Security for Colorado Families* (Washington, DC: Center for American Progress [CAP], 2016), 1, <https://www.americanprogress.org/issues/women/reports/2016/06/22/139955/fast-facts-economic-security-for-colorado-families/>
3. Three quarters of focus group participants who shared their race or ethnicity identified as women of color.
4. YI's analysis of RAPIDS.
5. Women made up an average of 45 percent of Colorado's workforce for 2000-2013. Colorado Dept. of Public Health and Environment (CDPHE), "Colorado's Employment Demographic Profile," in *Occupational Health Indicators Report: 2015 Update* (Denver: 2015), 3, [https://www.colorado.gov/pacific/sites/default/files/HHW\\_WS\\_Demographic-Profile\\_2015.pdf](https://www.colorado.gov/pacific/sites/default/files/HHW_WS_Demographic-Profile_2015.pdf).
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8. CWDC, *2017 Colorado Talent Pipeline Report*, 3-4.
9. See Ibid., 4.
10. See Bell Policy Center, *Guide to Economic Mobility* (Denver: 2018), 47, <https://www.bellpolicy.org/wp-content/uploads/2018/01/Guide-to-Economic-Mobility-FINAL.pdf>.
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12. NWLC, *The Wage Gap for Black Women - State Rankings: 2016* (Washington, DC: 2018), <https://nwlc-ciw49tixgw5lbab.stackpathdns.com/wp-content/uploads/2017/03/Black-Women-State-by-State-2018.pdf>.
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14. NWLC, *The Wage Gap for Latina Women - State Rankings: 2016* (Washington, DC 2018), <https://nwlc-ciw49tixgw5lbab.stackpathdns.com/wp-content/uploads/2017/03/Latina-Women-State-by-State-2018.pdf>.
15. CWDC, *2017 Colorado Talent Pipeline Report*, 13.
16. "Fact Sheet: Investing \$90 Million Through ApprenticeshipUSA To Expand Proven Pathways Into The Middle Class," USDOL, released April 21, 2016, <https://www.dol.gov/newsroom/releases/osec/osec20160421>.
17. "Colorado Awarded \$1.8 Million to Expand Apprenticeship Programs," CDLE, October 21, 2016, <https://www.colorado.gov/pacific/cdle/news/colorado-awarded-18-million-expand-apprenticeship-programs>.
18. Ibid.
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20. Young Invincibles' analysis of RAPIDS.
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28. CWDC, *2017 Colorado Talent Pipeline Report*, 7.
29. Ibid.



30. Ibid.
31. Ibid.
32. Ibid.
33. YI's analysis of RAPIDS and CWDC's *2017 Colorado Talent Pipeline Report*.
34. Ibid.
35. CDPHE, "Colorado's Employment Demographic Profile," 3.
36. YI's analysis of RAPIDS. Figure 2 includes both Hispanic and non-Hispanic people who also identify as white or black. Because the US Census Bureau surveys respondents using the terms "white" and "black" to refer to race, we will use these same terms when referencing any Census Bureau data.
37. YI's analysis of RAPIDS. The federal government considers race and Hispanic origin to be two separate and distinct concepts. Hispanics and Latinx people may be of any race. Because the US Census Bureau surveys respondents using Hispanic identity, we will use the term "Hispanic" when referencing any Census Bureau data. Otherwise, we will use "Latinx" to refer to this population.
38. CDPHE, "Colorado's Employment Demographic Profile," 3.
39. Based on Young Invincibles' analysis of sector and occupation data from the U.S. Census Bureau's Quarterly Workforce Indicators and USDOL's Bureau of Labor Statistics, respectively.
40. Ibid.
41. Ibid.
42. Ibid.
43. CWDC, *2017 Colorado Talent Pipeline Report*, 7.
44. Ibid.
45. The 2017 Tier 1 Top Jobs are listed in "Appendix D" of CWDC's *2017 Colorado Talent Pipeline Report*.
46. Ryan Erickson and Danielle Corley, *Fast Facts: Economic Security for Colorado Families*, 1.
47. CWDC, "Appendix D," in the *2017 Colorado Talent Pipeline Report*. In addition, one 2017 Tier 1 Top Job requiring a Bachelor's Degree had active RAs in Colorado in 2018, based on YI's analysis of RAPIDS data.
48. Ibid.
49. Ibid.
50. YI's analysis of RAPIDS and CWDC's *2017 Colorado Talent Pipeline Report*.
51. Ibid.
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53. CDPHE, "Colorado's Employment Demographic Profile," 3.
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62. Ibid..
63. See Erin Steva & Allie Aguilera, *Closing the Divide: Making Illinois a Leader in Equitable Apprenticeships* (Chicago: YI, 2018), 6-7, [http://younginvincibles.org/wp-content/uploads/2018/06/YI\\_ClosingTheDivide.pdf](http://younginvincibles.org/wp-content/uploads/2018/06/YI_ClosingTheDivide.pdf).
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66. Lindsey Wilkinson and Maura Kelly, *(Still) Building A More Diverse Workforce in the Highway Trades: 2016 Evaluation of the ODOT/ BOLI Highway Construction Workforce Development Program* (Portland: Oregon Bureau of Labor and Industries and Oregon Department of Transportation, 2016), 18, <http://archives.pdx.edu/ds/psu/18188>.
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