



RESEARCH REPORT

Youth Apprenticeship in the United States

Apprenticeship Evidence-Building Portfolio

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January 2023



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DISCLAIMER

This report was prepared for the U.S. Department of Labor's (DOL) Chief Evaluation Office by the Urban Institute, under contract number 1605DC-18-A-0032/1605DC-19-F-00312. The views expressed are those of the authors and should not be attributed to DOL, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

ACKNOWLEDGMENTS

This report was funded by the U.S. Department of Labor's Chief Evaluation Office. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission. We thank leadership and staff from the U.S. Department of Labor's Chief Evaluation Office and the Office of Apprenticeship for their review and comments on report drafts. We are especially grateful to Janet Javar, Michelle Mills, and Gloria Salas-Kos. Barbara Butrica and Demetra Nightingale of the Urban Institute also provided valuable comments on report drafts.

Executive Summary

In June 2020, the U.S. Department of Labor (DOL) announced the award of \$42,296,247 in Youth Apprenticeship Readiness grants to 14 organizations to develop or expand registered youth apprenticeships. Grant funds can be spent on activities to support apprentices ages 16 to 24 years participating in registered apprenticeship programs in high-demand industries, including manufacturing, health care, information technology, and cybersecurity. This research report provides background on youth apprenticeship programs in the U.S. to provide context for finalizing the design of the implementation evaluation of the Youth Apprenticeship Readiness grants. The report also summarizes the planned activities of the 14 grantees and the key features of each grantee's youth apprenticeship model and discusses key issues to include in the implementation evaluation.

Youth Apprenticeship in the United States

Young people confront many obstacles as they transition from school to work, including high unemployment and underemployment, increasingly stringent hiring requirements for middle-skills jobs, and increasing costs for college (Scott, Shakesprere, and Porter 2020; Adams, Hahn, and Coffey 2021). Registered apprenticeship provides an opportunity for youth to learn valuable occupational skills while earning wages and can help reduce the challenges they face when seeking employment. A substantial share of apprentices are between the ages of 16 and 24 at registration (30 to 40 percent of all apprentices in any given year), although a much smaller share of apprentices are 16 to 18 years old.¹

The research literature and the experiences of current youth apprenticeship programs—collected through document reviews, site visits, and interviews—provide insights into the models, resources, and strategies used by these programs to deliver services to apprentices. Partnerships and intermediaries are often used by youth apprenticeship programs to coordinate services or to coordinate other partners who otherwise would not have lines of communication with employers. Coordination is always important for apprenticeship programs that rely on the combined contributions of sponsors, employers, and providers of related technical instruction (RTI). This need for coordination is magnified when working with youth: employers and high schools need to work together to come up with a

flexible schedule so students can complete both high school diploma requirements and required on-the-job training (OJT) hours for registered apprenticeships. If RTI is delivered at a community or technical college, community colleges and high schools may need to work to provide dual credit opportunities, and parents of students may need additional information on apprenticeships (Kuehn 2021). To better coordinate between all partners, youth apprenticeship programs frequently use either a youth apprenticeship coordinator within the school system or an intermediary (Lerman, Kuehn, and Shakesprere 2019). Intermediaries communicate between all the partners involved in any given youth apprenticeship program and can take on tasks such as student and employer matching, participant and employer recruitment, and managing registration (Parton 2017; ESG and PAYA 2019). The intermediary role is sometimes filled by secondary school systems, community colleges, nonprofit organizations, state agencies, or workforce development councils (Office of Career, Technical, and Adult Education 2021).

States operate statewide youth apprenticeship programs, which are structured somewhat differently depending on the particular state context. Some are registered with DOL or a state apprenticeship agency, while others are unregistered. Each state program also varies in the roles of partnering entities, connection with the postsecondary education system, and duration of the apprenticeship program. Statewide youth apprenticeship systems discussed in this report include those in Wisconsin, Georgia, Colorado, North Carolina, South Carolina, and Maryland.

- Wisconsin and Georgia have two of the oldest youth apprenticeship programs—Wisconsin established its program in 1911 and Georgia in 1993 (Lerman, Kuehn, and Shakesprere 2019). Neither Wisconsin nor Georgia’s youth apprenticeship programs are registered, but both programs integrate OJT and work-based learning, require a certain number of hours, and result in credentials. Wisconsin’s youth apprenticeship program is overseen by the Wisconsin Department of Workforce Development (DWD 2020). Georgia’s youth apprenticeship program relies on the state’s Career, Technical, and Agricultural Education system and is run by local apprenticeship coordinators based in high schools or in school districts.²
- Colorado launched its youth apprenticeship program, CareerWise Colorado, in 2016. CareerWise is an independent public-private partnership that functions as a workforce intermediary (Baddour and Hauge 2020; Katz and Elliott 2020).
- North Carolina and South Carolina both have registered youth apprenticeship programs that operate through community and technical college systems. North Carolina and South Carolina have strong, regionally focused programs in Charlotte and Charleston, respectively (Parton 2017; Baddour and Hauge 2020; ApprenticeshipNC 2018).

- Maryland piloted unregistered youth apprenticeship programs in November 2015 and has a model that relies on the state's existing career and technical education system (Baddour and Hauge 2020).

The Youth Apprenticeship Readiness grants support registered youth apprentices, but they operate in the context of, and often directly build on these existing systems and programs for youth apprenticeship.

Youth Apprenticeship Readiness Grants

The Youth Apprenticeship Readiness Grants were awarded to 14 organizations and provide funding between \$1.5 and \$5.0 million to create and expand registered youth apprenticeship. Grantees include workforce intermediaries, higher education agencies and institutions, and other state and nonstate systems. All grantees support youth between the ages of 16 and 24, but some focus specifically on underserved populations. Each grantee is committed to serving at least 200 apprentices.

The Youth Apprenticeship Readiness grantees include six workforce intermediaries, four postsecondary institutions or agencies, two noneducation state agencies, one secondary school system, and one workforce development agency. Eleven grantees only operate in a single state. Three grantees are expanding national or regional programs. Four grantees are planning to offer some type of pre-apprenticeship training.

Grantees are working with a variety of different partners, including required education and training, employer, industry, as well as other optional partners. Grantees planning to include smaller numbers of apprentices tend to have fewer partnerships in place and will handle most services and activities themselves. The growth and development of these partnerships will be a key focus of the implementation study.

Continued areas of focus in the implementation study include the following:

- The different training models used by grantees to deliver registered apprenticeship programs to high school youth (ages 16 to 18) compared with older youth, and the prevalence of programs designed exclusively for youth (as opposed to adult apprenticeship programs that also include younger participants ages 18 to 24)

- The relationship between registered programs supported by the Youth Apprenticeship Readiness Grant program and existing apprenticeship and work-based learning programs (Youth Apprenticeship Readiness grantees are required to support registered apprenticeship programs; however, because many youth apprenticeship programs are unregistered,³ another area of interest for the implementation study will be to understand how grantees formalize and build on existing unregistered programs and training systems.)
- The evolving role of grant partners. Because partnerships are often important in registered apprenticeship programs in general and youth apprenticeship programs in particular (Kuehn 2021), the implementation study will track the formation and evolution of grantee partnerships and the roles of grant partners.

Introduction

This report informs the implementation evaluation of the Youth Apprenticeship Readiness grants, a study included under the broader Apprenticeship Evidence-Building Portfolio. The Apprenticeship Evidence-Building Portfolio is a research initiative of the U.S. Department of Labor (DOL) conducted by the Urban Institute and its partners to better understand several federal apprenticeship expansion efforts.⁴ The report begins by reviewing the literature on youth apprenticeship in the U.S. and describing trends in registered youth apprenticeship and state youth apprenticeship systems between 1996 and 2019. Some prominent state youth apprenticeship programs are unregistered, but nevertheless provide important lessons for registered Youth Apprenticeship Readiness Grant programs. After reviewing the literature, the report describes the 14 Youth Apprenticeship Readiness grantees, including their apprentice targets, the extent of their operations, and the partnerships that they have put into place.

This report—and others produced as a part of the Apprenticeship Evidence-Building Portfolio—makes important distinctions between different types of apprenticeship training.⁵ Many youth apprenticeship programs currently operating in the U.S. are **unregistered**, but only **registered** apprenticeship programs can be supported by Youth Apprenticeship Readiness Grant funds. This report and other work in the portfolio use the following definitions of different apprenticeship training models:

- A **registered apprenticeship program** meets federal and state standards and is registered with DOL or with a DOL-approved State Apprenticeship Agency (SAA). Both the DOL Employment and Training Administration Office of Apprenticeship (OA) and SAAs register programs after approving their standards, which provide detailed plans for at least 2,000 hours of on-the-job training (OJT) and a recommended minimum of 144 hours of related technical instruction (RTI) resulting in an industry-recognized credential. DOL or an SAA may periodically inspect the program to ensure that it follows apprenticeship standards and all health, safety, and equal employment opportunity regulations.⁶
- An **unregistered apprenticeship program** is one that uses the same earn-and-learn model as a registered apprenticeship but does not go through the same registration process or DOL review process for apprenticeship standards. Unregistered apprenticeship programs can include a wide variety of approaches for upskilling an employee with occupation-specific training. Unregistered apprenticeship programs are not eligible for support from Youth

Apprenticeship Readiness Grant funds, but they are discussed in this report because many existing state youth apprenticeship systems are not registered.

- A **pre-apprenticeship program** is designed to prepare individuals of any age for entry into an apprenticeship program or, in some cases, other job opportunities. It may last anywhere from a few weeks to a few months and may or may not include a paid, work-based experience. Pre-apprenticeship programs have varied components; however, their core objective is to place individuals on a pathway to employment that includes an apprenticeship program. Pre-apprenticeship programs are not registered with OA.⁷
- A **youth apprenticeship program** is for youth ages 16 to 24. It combines academic instruction and RTI with work-based experience to build occupational skills. Youth apprenticeship programs also provide the foundation for youth to choose between multiple pathways—college, full-time employment, or a combination.⁸ All youth apprenticeship programs supported by the Youth Apprenticeship Readiness Grant Program are registered with OA or an approved SAA and therefore result in an industry-recognized credential.

Registered youth apprenticeship programs must also be distinguished from apprenticeship programs that accept youth apprentices. For the purposes of the Youth Apprenticeship Readiness Grant Program, a **youth apprentice** is defined as a registered apprentice between the ages of 16 and 24. Some youth apprentices supported by the Youth Apprenticeship Readiness Grant Program are registered in apprenticeship programs that also include adults, rather than in youth apprenticeship programs that exclusively serve youth. At the core of apprenticeship programs are partnerships with employers and education and training providers. Apprentices are sponsored by an employer or group of employers (sometimes in collaboration with a union) to receive paid, work-based experience and OJT. Education and training providers, such as institutions of higher education, usually provide RTI. Youth apprenticeship programs typically involve even more partners than adult programs, including a combination of secondary and postsecondary educational institutions and supportive service providers to help youth transition from school to work.

This report describes the state of youth apprenticeship in the U.S. to provide context for the implementation evaluation of the Youth Apprenticeship Readiness Grants. It identifies trends in youth participation in registered apprenticeship in the U.S. and describes existing statewide youth apprenticeship systems, including both registered and unregistered youth apprenticeship programs. Finally, it describes the organization and partnerships of the 14 Youth Apprenticeship Readiness grantees.

Youth Apprenticeship in the United States

This section summarizes the current state of youth apprenticeship in the United States as a framework for understanding the Youth Apprenticeship Readiness Grants and other prominent investments in youth apprenticeship. Youth apprentices are already relatively common in the registered apprenticeship system, comprising between 30 to 40 percent of all registered apprentices in any given year.⁹ However, a much smaller share of apprentices are high school age, or between the ages of 16 and 18. For example, only 2.7 percent of apprentices registered in 2021 were in this age range (figure 3). A similarly small share of youth apprentices were registered in youth apprenticeship programs that exclusively serve youth ages 24 or younger in 2021—3.5 percent.¹⁰

Background

Youth may participate in a range of work-based education opportunities, including career and technical education (CTE) classes, capstone projects, jobsite visits, internships, and apprenticeships (Spaulding, Hecker, and Bramhall 2020). Youth apprenticeship is an intensive work-based education strategy that combines classroom instruction with paid, productive OJT. Interest in youth apprenticeship has grown in recent years as a strategy for building skills that are valuable in the labor market and to serve as a structured bridge or pathway between high school and work. Young people with jobsite experience provided by youth apprenticeship have improved career outcomes and employability skills compared with youth without early work experience (Lerman 2013; Lerman and Packer 2015). Youth apprenticeship has been proposed as a solution to youth unemployment and underemployment, skills gaps, and increasing tuition costs and student debt burdens (Lerman and Packer, 2015; Parton 2017; Fuller and Sigelman 2017).

Lerman (2015) argues that youth apprenticeship can advance equity in the workforce and help close gaps in postsecondary outcomes. Conrad and colleagues (2020) describe strategies for supporting equity in youth apprenticeship programs that are targeted at eliminating barriers to participation and successful completion, including the limited availability of certain types of occupational training, language barriers, and gaps in transportation and internet access. Another common problem is that high school students are often unprepared for apprenticeships or uninspired by outreach efforts (Steva 2017). One solution to inadequate preparation for a full apprenticeship is

pre-apprenticeship training to elicit student interest in apprenticeship and provide a baseline of occupational and academic skills (Wallace 2018). Gaal (2018) provides short case studies on three pre-apprenticeship programs, detailing how these efforts can help prepare youth for apprenticeship programs.

Many of the youth apprenticeship programs and systems currently operating in the U.S. are associated with secondary school systems—such as the Georgia Youth Apprenticeship Program (Lerman, Kuehn, and Shakesprere 2019) or CareerWise Colorado (Katz and Elliott 2020)—and therefore vary from state to state depending on the state department of education’s approach to work-based learning. Several of these statewide youth apprenticeship programs emerged out of the school-to-work movement of the early 1990s, when youth apprenticeship was viewed as a solution to youth unemployment and a critical contributor to international competitiveness. Because youth apprenticeship efforts in the school-to-work movement were spearheaded in states’ secondary school systems rather than through the national registered apprenticeship system, many prominent examples of youth apprenticeship are unregistered (Bailey and Merritt 1993; Lerman 2003). Many state and local education agencies do not actively support youth apprenticeship, but the U.S. Department of Education and state and local educational agencies have been increasingly interested in apprenticeship as a complement to high school career and technical education (Kreamer and Zimmerman 2017; Office of Career, Technical, and Adult Education 2021). Monthey (2019) argues that state boards of education have considerable scope to drive youth apprenticeship through their authority to approve secondary CTE programs and by forming partnerships and securing funding.

There is limited knowledge about youth apprenticeship outcomes, particularly for youth apprenticeship programs that are still operating outside the registered apprenticeship system. Only 20 states have a formal statewide definition of youth apprenticeship to differentiate between apprenticeship and other work-based learning opportunities for youth. Among states that have a formal definition, 16 collect and provide data on participation (Advance CTE 2019). Collecting data on participation and outcomes such as employment and wages after participation allows states and researchers to analyze activities and results.

Young adults value programs that include free college credits and increased opportunities after high school graduation (Parton 2017). Parents also care about opportunities for their children to attend college and compare apprenticeship opportunities with similar college options. In a national survey asking which postgraduation options parents felt positively about, 75 percent of surveyed parents felt positively about their children starting an apprenticeship after high school—not as high a

percentage as about starting college, but significantly higher than about other options such as starting a job immediately (Sterrett et al. 2020).

Youth apprenticeship programs can be more complicated than registered apprenticeship programs that train adults because of the additional partners involved in the education of young adults and youth services. Youth apprenticeship programs based in high schools need to align with existing high school academic and CTE programs and ensure that students meet state graduation requirements (Rice et al. 2016). Local colleges are often an additional partner in youth apprenticeship programs that either utilize dual enrollment or that utilize colleges for related instruction (Monthey 2019). Youth may also require additional supportive services provided by external partnerships. These services remove barriers to apprenticeship participation by providing support such as transportation, housing, child care, food assistance, or appropriate work clothing (Kuehn 2021). Building partnerships, especially employer partnerships, takes time and trust. Although colleges commonly work with employers to deliver education and training, high schools and youth-serving organizations often do not, so employer partnerships can be more difficult to develop for youth apprenticeship programs (Gaal 2018).

Intermediary organizations often take on the role of coordinating the partners contributing to an apprenticeship program. Some key responsibilities intermediaries take on can include matching students and employers, recruiting students, working with schools, managing relationships, covering liability, training supervisors, planning programs, and helping employers identify appropriate tasks and skill-building for apprentices. Intermediaries are important for absorbing some of the burden of program planning and can also help manage paperwork for apprenticeship registration, employee records and pay, and data sharing agreements between institutions (ESG and PAYA 2019). Examples of youth apprenticeship programs run by intermediaries include CareerWise Colorado and the Charleston Regional Youth Apprenticeship program at Trident Technical College in South Carolina.¹¹ CareerWise Colorado, a Youth Apprenticeship Readiness grantee, is a nonprofit organization that coordinates with employers and training providers to organize youth apprenticeship programs in the state. Trident Technical College serves a similar role in South Carolina, with the support of Apprenticeship Carolina staff.

In some cases, apprenticeship programs, high schools, or school districts hire staff as dedicated apprenticeship coordinators or apprenticeship navigators who fulfill many of the coordination roles of an intermediary. School staff coordinate with multiple participating employers and recruit and provide guidance to students interested in apprenticeship (Lerman, Kuehn, and Shakesprere 2019). Schools are also well positioned to maintain contact with apprentices' parents and to ensure continued parental support for the program (Standafer 2019). State law in Colorado, Virginia, and Oklahoma requires that

public high schools take certain steps to ensure that students and parents are regularly informed about apprenticeship opportunities.¹²

The Youth Apprenticeship Readiness grantees are engaging all of these types of partners in their grant activities. Grantees' partnership structures and intermediary roles are described in more detail in the Grantee Partners section of this report.

The United States' Experience with Youth Apprenticeship

This section summarizes recent experiences in the U.S. with youth apprenticeship based on analysis of data on registered apprentices from the Registered Apprenticeship Partners Information Data System (RAPIDS), OA's reporting system for national registered apprenticeship programs. Analysis of RAPIDS data shows that the Youth Apprenticeship Readiness Grants seek to build on what is currently a relatively small and disorganized youth apprenticeship system. Currently, there is no national definition of youth apprenticeship and no national system of monitoring and oversight for youth apprenticeship separate from the national registered apprenticeship system. Several states have their own well-defined and regulated youth apprenticeship systems integrated into their secondary school systems, but some of the most prominent state youth apprenticeship systems are not registered and therefore do not appear in RAPIDS (e.g., the youth apprenticeship programs in Wisconsin and Georgia).

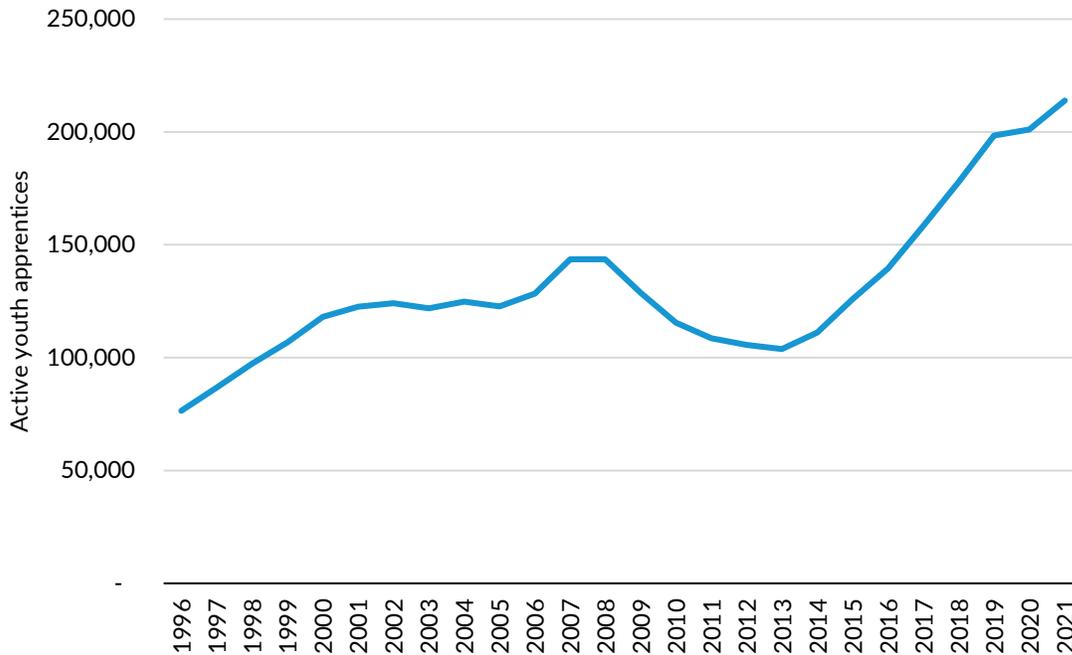
Before 2021, only 35 states reported their apprenticeship data to RAPIDS, but RAPIDS data are being continuously improved to include more states. The data presented here do not include all youth apprentices, but they do include data from 46 states and programs that are nationally registered, which were included in RAPIDS at the time this report was written. The analyses use the Youth Apprenticeship Readiness Grant definition of a youth apprentice, which is a registered apprentice between the ages of 16 and 24. Information from unregistered youth apprenticeship programs are described after the analysis of the RAPIDS data on registered apprentices.

Youth Apprentices in the United States

Except for a temporary decline following the Great Recession in 2009, the number of youth ages 16 to 24 registered as apprentices and entered into the RAPIDS database has grown steadily over time,

from over 76,000 active youth apprentices in 1996 to almost 214,000 in 2021 (figure 1). Growth in the number of youth apprentices closely tracks growth in all apprentices recorded in RAPIDS, with youth (ages 16 to 24 at registration) representing between 30 and 40 percent of all apprentices registered between 1996 and 2021 (not shown in figure 1).

FIGURE 1
Registered youth apprentices (ages 16 to 24 at registration) in RAPIDS, 1996–2021



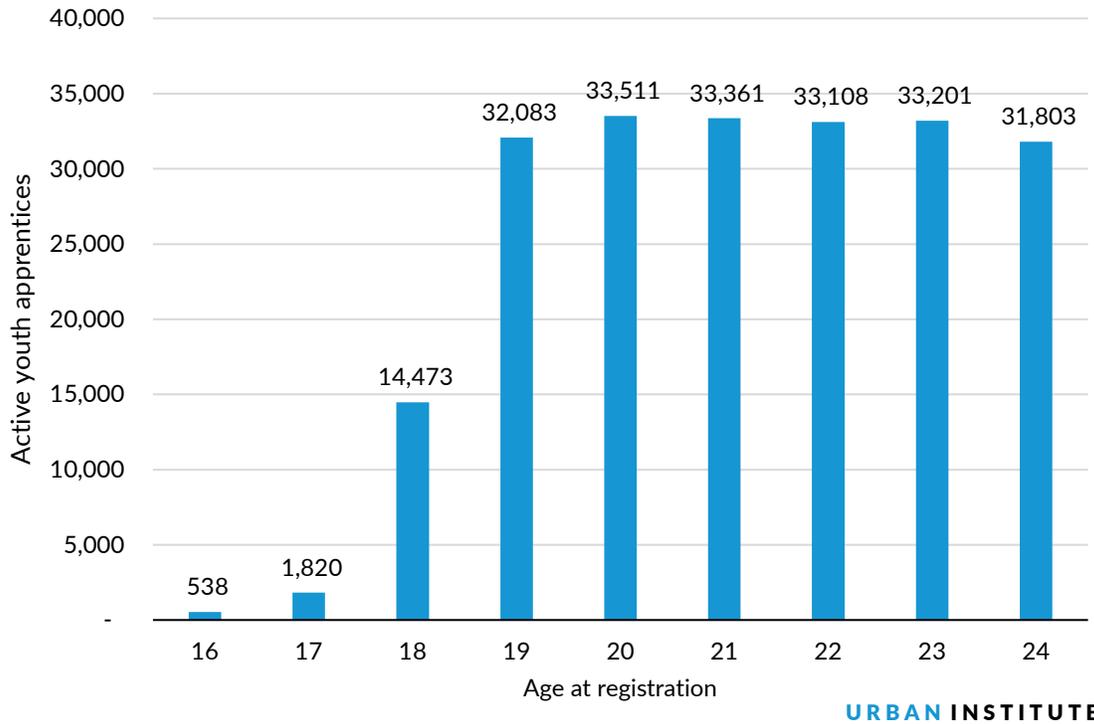
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Source: Authors' calculations from RAPIDS data

Notes: Apprentices included are those in programs in the states that report to the RAPIDS database or nationally registered programs.

Although youth apprentices constitute a substantial share of all registered apprentices in the U.S., 92 percent of them were not between the ages of 16 and 18 at the time of their registration in 2021 (figure 2). In 2021, only 538 apprentices were 16 when they registered and only 1,820 were 17. Many more apprentices were 18 at the time of registration (14,473), possibly registering after completing high school.¹³ However, even 18-year-old registrants are much less common than youth apprentice registrants who are 19 to 24 years old. Only 7.9 percent of all youth apprentices (ages 16 to 24 at registration) were 18 or younger at registration.

FIGURE 2
Active youth apprentices (ages 16 to 24), by age, 2021



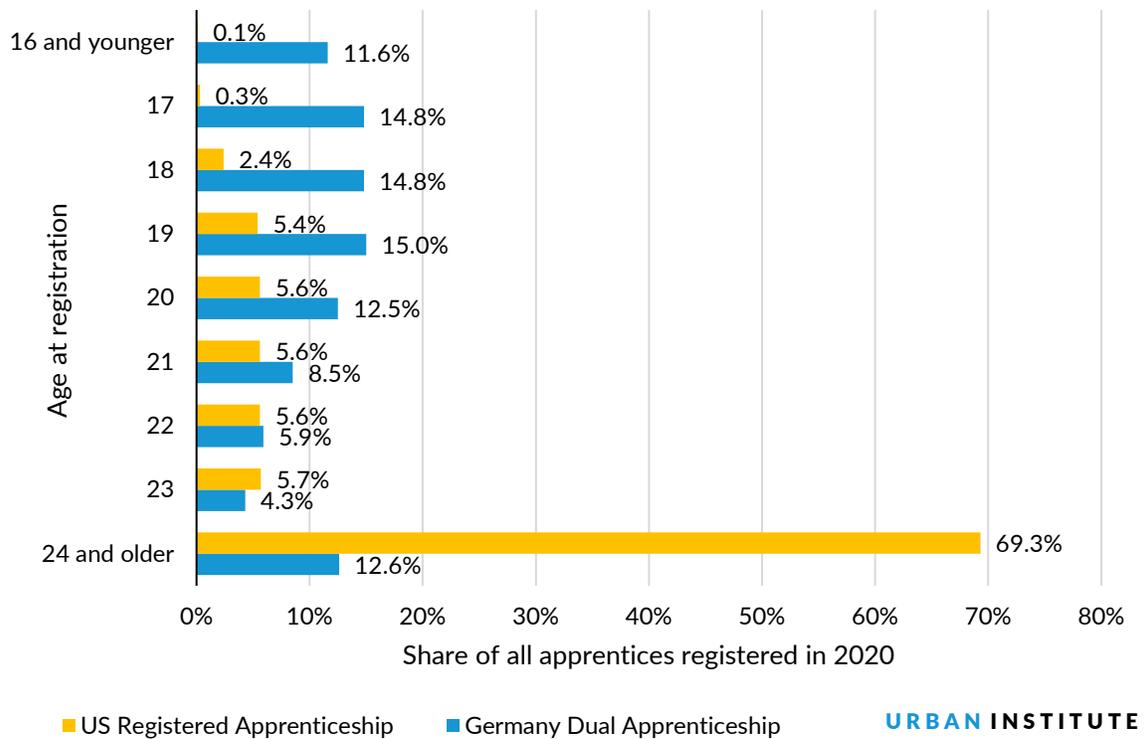
Source: Authors' calculations from RAPIDS data

Notes: There were 213,898 apprentices active in 2021 who were between the ages of 16 and 24 at registration. Apprentices included are those in programs in the states that report to the RAPIDS database or nationally registered programs.

The age distribution of registered apprentices in the U.S. can be contrasted with the age distribution of apprentices in the German dual apprenticeship system, a typical example of apprenticeship systems in Europe in which the large majority of apprentices would be considered youth apprentices under the Youth Apprenticeship Readiness Grant definition (figure 3). In 2020, only 12.6 percent of German apprentices were 24 or older at the start of their contract, compared with 69.3 percent of registered apprentices in the U.S.. The modal age of a German apprentice at the beginning of his or her contract is 19.

FIGURE 3

Age distribution of newly registered apprentices in the U.S. and Germany, 2020



Source: U.S. data from the authors' calculations from RAPIDS data. German dual apprenticeship data from Table A5.8-1 in Bundesinstitut für Berufsbildung, 2022. *Datenreport zum Berufsbildungsbericht 2022: Informationen und Analysen zur Entwicklung der beruflichen Bildung*. Bonn, Germany: Bundesinstitut für Berufsbildung.

https://www.bibb.de/dokumente/pdf/Datenreport%202022_20102022_online.pdf

Notes: Data are presented for 2020 rather than 2021 because it is the most recent year available for the German data. German data do not separately report 24-year-olds, so they are grouped with other older apprentices, even though the Youth Apprenticeship Readiness Grant funding announcement does identify 24 year olds as youth apprentices. U.S. apprentices included are those in programs in the states that report to the RAPIDS database or nationally registered programs.

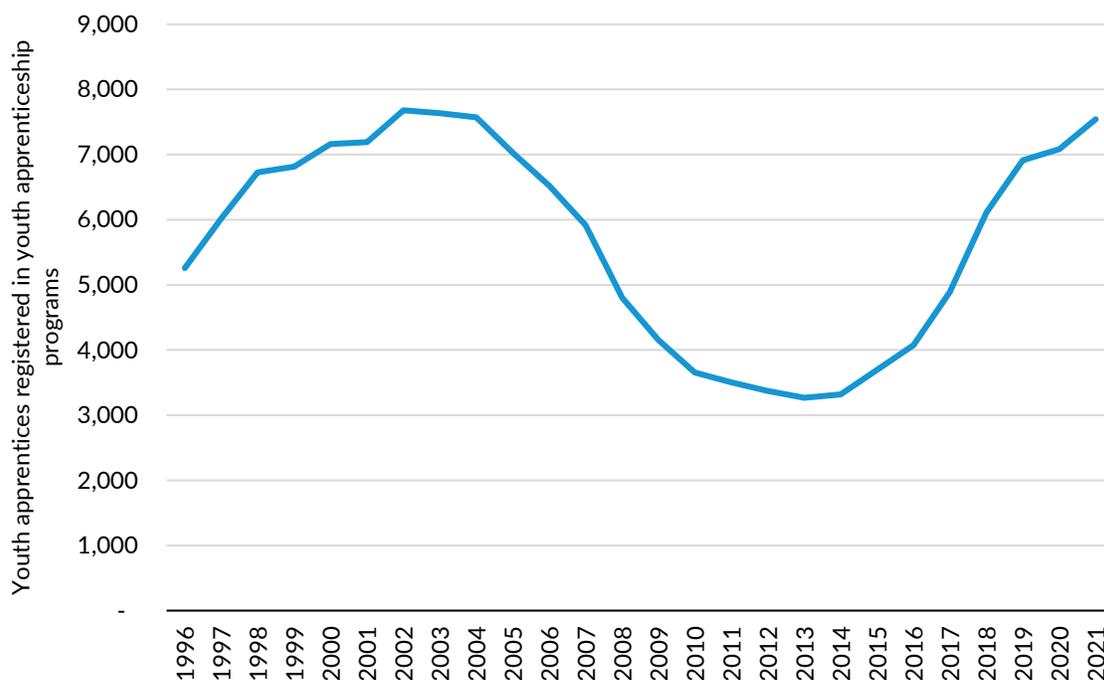
Youth Apprenticeship Programs in the United States

Youth apprentices are defined by the Youth Apprenticeship Readiness Grant funding announcement, but there is no official definition of a youth apprenticeship *program* used by DOL or included in the funding announcement. States use the term **youth apprenticeship program** in different ways, and some states' youth apprenticeship programs are not registered. One reasonable definition of a youth apprenticeship program that aligns with the funding announcement is a registered apprenticeship program where all active apprentices are 24 years old or younger at registration or which are associated with high schools or youth correctional facilities. Using this definition, the large majority of

youth apprentices identified in figure 1 are not in youth apprenticeship programs, but in registered programs that also include adult apprentices. Figure 4 shows that the number of youth apprentices registered specifically in youth programs peaked in 2002 at 7,680, or at 6.2 percent of all youth apprentices active in that year.¹⁴ After 2002, the number declined until 2013 and then recovered substantially between 2013 and 2021. By 2021, 7,545 youth apprentices were registered in youth apprenticeship programs, or 3.5 percent of all registered youth apprentices.

These data indicate the important distinction between registering more youth apprentices and building a system of registered youth apprenticeship *programs*. A potential metric for tracking the growth of a youth apprenticeship system under the Youth Apprenticeship Readiness Grants will be the share of new or expanded registered apprenticeship programs supported by grant funds that exclusively or primarily serve youth.

FIGURE 4
Youth apprentices (ages 16 to 24 at registration) registered in youth apprenticeship programs, 1996–2021



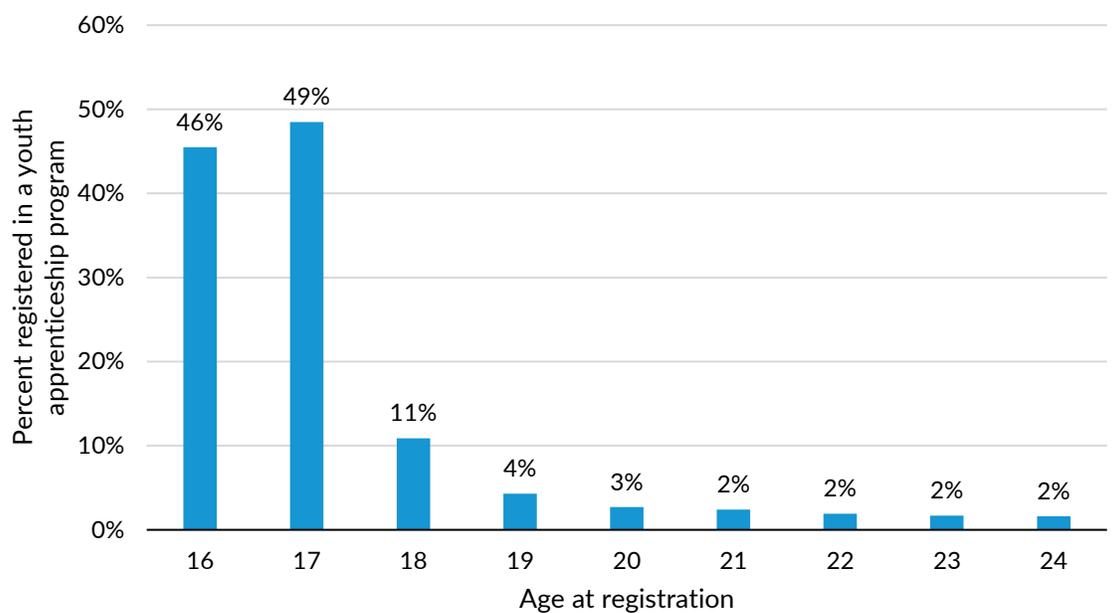
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Source: Authors' calculations from RAPIDS data

Notes: Apprentices included are those in programs in the states that report to the RAPIDS database or nationally registered programs. Youth apprenticeship programs are defined as programs in which all active apprentices were age 24 or younger at the time of registration or which are associated with high schools or youth correctional facilities.

Among all youth apprentices ages 16 to 24, high school-age apprentices had the highest share of apprentices registered in youth apprenticeship programs. Of apprentices who registered when they were 16 or 17, 46 and 49 percent, respectively, registered in a youth program where all apprentices were 24 or younger at registration (figure 5). Eleven percent of apprentices who registered when they were 18 registered in youth apprenticeship programs, and less than 5 percent of apprentices who registered when they were 19 or older registered in youth apprenticeship programs. Registration in a youth apprenticeship program is, therefore, common for the youngest youth apprentices (figure 5), but because there are so few apprentices younger than 18 (figure 2), the total number of apprentices in youth apprenticeship programs remained below 7,000 in most years (figure 4).

FIGURE 5
Percentage of youth apprentices (ages 16 to 24 at registration) registered in youth apprenticeship programs, by age, 2021



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Source: Authors' calculations from RAPIDS data

Notes: Apprentices included are those in programs in the states that report to the RAPIDS database or nationally registered programs. Youth apprenticeship programs are defined as programs in which all active apprentices were age 24 or younger at the time of registration or which are associated with high schools or youth correctional facilities.

State Variation in Youth Apprenticeship

Levels of registered youth apprenticeship vary across states. Since youth apprenticeship is often closely tied to the secondary education system, which is governed at the state and local level,

registrations in youth apprenticeship programs partnered with schools will vary by state. Figure 6 presents the geographic distribution of apprentices registered in youth apprenticeship programs in 2021 that were reported in the RAPIDS database. The figure does not report youth apprentices registered with programs that also serve adult apprentices. The 4 states and the District of Columbia that were not included in RAPIDS at the time this report was written are grayed out.¹⁵ States that do report their data to RAPIDS are shaded to indicate the relative prevalence of apprentices registered in youth apprenticeship programs.

North Carolina had the most active registered apprentices in youth apprenticeship programs in 2021 (1,082), followed by Connecticut (853), Virginia (632), Iowa (574), South Carolina (374), New Jersey (339), and Wisconsin (331) (figure 6). Midwestern and Mid-Atlantic states are well represented in the top third of states registering apprentices in youth programs. Hawaii, Kansas, Louisiana, and New Mexico had the lowest number of apprentices registered in youth apprenticeship programs of all the states reporting to RAPIDS. Certain states with large youth apprenticeship programs, like Georgia, are not indicated as having a high number of registered youth apprentices in figure 6 because their state youth apprenticeship system is unregistered. Although unregistered youth apprenticeship systems may provide lessons in implementation and practice for registered programs, all youth apprentices supported by the Youth Apprenticeship Readiness Grants must be registered.

governor John Hickenlooper as a part of the Business and Experiential-Learning Commission. The program was modeled after Switzerland's vocational and education training system, in particular the Swiss youth apprenticeship model (Parton 2017). After piloting a program in 2017 with 119 apprentices and 44 employers, CareerWise Colorado had over 400 apprentices and 132 employers in its first cohort that graduated in 2020 (Baddour and Hauge 2020; Katz and Elliott 2020). Since 2020, CareerWise has expanded to other states and was awarded one of the Youth Apprenticeship Readiness Grants. Some of CareerWise Colorado's apprenticeship programs are registered and some are unregistered. The intermediary expects to move more substantially into registered apprenticeship as a part of the Youth Apprenticeship Readiness Grant.

CareerWise is designed as a three-year program starting in students' junior year of high school. Each year, students spend more hours in OJT and fewer hours in the classroom, culminating in a final year of full-time employment. Students earn a high school diploma, an industry credential, and the opportunity to earn up to a semester's worth of college credit for free. CareerWise supports employers, apprentices, and schools with specialized staff for each stakeholder and handles outreach, recruitment, mentor training, and general support (Katz and Elliott 2020).

CareerWise Colorado is a Youth Apprenticeship Readiness Grantee.

GEORGIA

Another well-established state apprenticeship program was launched in Georgia in 1993. The Georgia Youth Apprenticeship Program began with a pilot program of 358 students and grew to over 3,000 enrolled youth apprentices in 2017 (Lerman, Kuehn, and Shakesprere 2019).¹⁶ The program targets high school juniors and seniors who are eligible for an apprenticeship job placement after taking a single credit in a related career pathway. Students work with parents, teachers, school counselors, and employers to develop an individualized curriculum of classroom-based learning and OJT that suits their career needs. Students are required to complete 720 hours of OJT supervised by a mentor to help them through the program.¹⁷ Like Wisconsin's, Georgia's youth apprenticeship program is unregistered.

Georgia's youth apprenticeship program is maintained by local youth apprenticeship coordinators, each serving one or more schools. Coordinators are funded by the state and responsible for recruiting students and employers, matching students with employers, communicating with students and faculty about curriculum needs, and monitoring and reporting on the progress of youth apprentices. Youth apprenticeship coordinators report finding support from the Georgia Department of Education's

Career, Technical, and Agricultural Education system and teachers because the programs have closely related work-based learning goals (Lerman, Kuehn, and Shakesprere 2019).

MARYLAND

Maryland established a youth apprenticeship pilot program in 2016, the Apprenticeship Maryland Program. In 2018, the state expanded the program, which is currently available in 12 counties. High school juniors and seniors are recruited to be apprentices; they are unregistered but required to complete 450 hours of OJT and a year of related classroom learning. Apprenticeship industries include construction, manufacturing, health care, automotive, information technology, marine trades, and various others. With House Bill 1207 in 2014, Maryland also established the Youth Apprentice Advisory Committee, whose mission is to advise and evaluate the effectiveness of the youth apprenticeship model.¹⁸ The committee's 2019 report indicates that the program grew from 44 to 109 eligible employers and had 64 students enrolled for the 2019–2020 school year (up from 47 the previous school year). Similar to Georgia's, Maryland's youth apprenticeship program also benefits from integrating resources from the state's CTE system (Baddour and Hauge 2020; Apprenticeship Maryland 2019).

SOUTH CAROLINA

South Carolina does not have a separate youth system but has expanded youth apprenticeships through broader registered apprenticeship expansion efforts initiated in 2007 by Apprenticeship Carolina, a team in the South Carolina Technical College system. Apprenticeship Carolina provides support to employers to help them register apprenticeship programs and form partnerships with the state's technical colleges (Parton 2017). As of 2020, over 34,000 apprentices had been registered under Apprenticeship Carolina, and 242 of the 1,089 registered programs are registered youth apprenticeship programs. South Carolina's youth apprenticeship programs are operated by local technical colleges in partnership with high schools. Apprentices are dual enrolled in high school and college for RTI.¹⁹

The South Carolina Technical College System is a Youth Apprenticeship Readiness Grantee.

NORTH CAROLINA

North Carolina's youth apprenticeship model is similar to South Carolina's. ApprenticeshipNC acts as a consultant handling registration paperwork and connecting employers and educators with each other and with state and national resources. Workforce boards, employers, and schools work together to develop and register each youth apprenticeship program. ApprenticeshipNC is managed by the North

Carolina Community College System (ApprenticeshipNC 2018). Youth apprentices start as high school juniors and senior and participate in the program for three to four years, completing 6,400 hours of OJT and 1,600 hours of RTI at a community college. North Carolina's efforts build on the highly successful Charlotte-based Apprenticeship 2000 program, which is modeled after the Swiss system of industry-driven youth apprenticeship programs. The Apprenticeship 2000 model has been followed by 20 regional consortia in the state (Baddour and Hauge 2020).

WISCONSIN

The oldest state youth apprenticeship program is the Wisconsin Youth Apprenticeship Program, which is not registered with the state's SAA. Authorized in 1991, Wisconsin's program began in 1992 with 21 apprentices and now includes 5,000 apprentices annually (DWD 2020). High school students can participate in this program for either one or two years, completing 450 or 900 hours of OJT and two or four semesters of RTI at their high school or a local technical college. Although these hours requirements are insufficient for registered apprenticeship programs,²⁰ if the Wisconsin program were registered, its number of youth participants would dwarf the number in South Carolina, the state with the highest number of registered apprentices in a youth apprenticeship program. Industries represented in the Wisconsin Youth Apprenticeship Program include manufacturing, health care, agriculture and natural resources, biotechnology, finance, hospitality, architecture and construction, information technology, engineering, and transportation (Karas and Lerman 2016; Parton 2017). A study analyzing the educational outcomes of 627 Wisconsin CTE students indicates that a higher share of students who participated in the Wisconsin Youth Apprenticeship Program continued in their chosen career pathway than peers who completed concentrated programs of study but did not participate in youth apprenticeship (Mindham and Schultz 2019).

Although closely tied to high schools, the Wisconsin Youth Apprenticeship Program is run through local consortia and overseen by the Wisconsin Department of Workforce Development. Consortia are provided with standardized curricula and grant funds from the department and are then responsible for recruitment and program implementation. Each regional consortium must have a steering committee, a regional coordinator, and a fiscal agent. Schools must have a school-based apprenticeship coordinator. Regional consortia can be comprised of school districts, chambers of commerce, technical colleges and other educational organizations, and local workforce and economic development boards. In recent years, increased funding along with buy-in from educators and employers has helped the program expand (Parton 2017; DWD 2020).

Other states have also started developing ways to engage youth in apprenticeship programs. The Kentucky TRACK program relies on the state CTE program and prepares youth to enter into registered apprenticeships.²¹ Some school districts in Iowa simply offer registered apprenticeships directly to high school students.²² These states have found ways to utilize the existing infrastructure of CTE and registered apprenticeships to attract youth into apprenticeship programs (Parton 2017).

Partnership to Advance Youth Apprenticeship

Outside of OA and the various state youth apprenticeship systems, private funders have also increased investments in youth apprenticeship. The New America Foundation and its partners launched the Partnership to Advance Youth Apprenticeship (PAYA) in 2018 as an initiative to promote, support, and expand youth apprenticeships.²³ The PAYA grant initiative provides grantees with up to \$200,000 in funding, as well as technical assistance from PAYA Network partners.²⁴ Before the Youth Apprenticeship Readiness Grants were awarded in 2020, PAYA was the largest multistate effort to promote youth apprenticeship. PAYA defines high-quality youth apprenticeships as programs that are career oriented, equitable, portable, adaptable, and accountable (Baddour and Hauge 2020). After receiving over 220 applications, PAYA selected nine grantees in May 2019 (table 1). Grantees were a mix of secondary school systems, state apprenticeship agencies, workforce development agencies, and nonprofit intermediaries. PAYA grantees are generally focused on expanding youth apprenticeship in individual states and regions, reflecting the strong partnerships between youth apprenticeships and state school systems. Eight of the nine PAYA grantees are focused on expanding youth apprenticeships in multiple industries or occupations, and only one grantee (Early Care & Education Youth Apprenticeship) operates in a single industry.²⁵

TABLE 1

PAYA grantee lead organizations, locations, and focal industries or occupations, 2018

PAYA grantee	Lead organization and state	Focal industry or occupation
Apprenticeship 502	Jefferson County Public Schools (KY)	Advanced manufacturing, building and construction, education, finance, professional services, health care, information technology, media, arts, communications, hospitality
ApprenticeshipNC	ApprenticeshipNC (NC)	Transportation, media, arts, communication, building and construction, energy, health care
The Birmingham Promise	City of Birmingham Dept. of Innovation and Economic Opportunity (AL)	Finance and professional services, information technology, energy, engineering
Career Launch Chicago	City Colleges of Chicago (IL)	Advance manufacturing, health care, information technology
Early Care & Education Youth Apprenticeship	Early Care & Education Pathways to Success (CA)	Early care and education
King County Regional Youth Apprenticeship Consortium	Workforce Development Council of Seattle-King County (WA)	Advance manufacturing, building and construction, information technology, health care, culinary arts, automotive
Learn and Earn to Achieve Potential (LEAP) Initiative	Project for Pride in Living (MN-WI)	Finance and professional services, health care, transportation
Montana Youth Apprenticeship Partnership	Reach Higher Montana (MT)	Information technology, health care
Texas Youth Apprenticeship Partnership	Educate Texas (TX)	Advanced manufacturing, health care, information technology, energy, education

Source: "Partnership to Advance Youth Apprenticeship: Our Grantees," New America, accessed May 12, 2021, <https://www.newamerica.org/education-policy/partnership-advance-youth-apprenticeship/about/our-grantees/>.

The PAYA initiative, along with its partners, developed a working group to identify key challenges and solutions to data collection about youth apprenticeships. One issue highlighted by the working group was that the RAPIDS reporting system for registered apprentices does not provide a good way to identify distinctive youth apprenticeship programs. Many state youth apprenticeship programs also currently do not have data collection systems. Data collection is critical for improving apprenticeship programs, but it can be burdensome and difficult to coordinate between the many stakeholders involved in youth apprenticeship. Advance CTE (2020) made a series of recommendations about what should be done to help ameliorate these issues.

- First, at the local level, data collection and sharing agreements should be established between partners as a part of apprenticeship program development. Intermediaries can help delegate data collection between partners and should communicate clearly the necessity of and eventual use for the data.

- Second, data collection should begin with a foundation of necessary data for accountability and reporting, but from there should be expanded to other data collection. Keeping communication open about what metrics are most important to stakeholders will help determine how to grow data collection.
- Third, partners should rely on existing systems where they can. For example, community colleges could include apprenticeship participation in their student information systems.

Part of PAYA's next steps will be to prototype ways to support data collection and sharing in order to understand the best practices for youth apprenticeship (Advance CTE 2020).

Youth Apprenticeship Readiness Grants

In June 2020, DOL announced the award of \$42,296,247 in Youth Apprenticeship Readiness grants to 14 organizations to develop or expand registered youth apprenticeship programs.²⁶ Grant funds can be spent on activities to support apprentices ages 16 to 24 participating in registered apprenticeship programs in high-demand industries, including manufacturing, health care, information technology, and cybersecurity. By targeting registered programs, the Youth Apprenticeship Readiness grants seek to align the various unregistered youth apprenticeships with the registered apprenticeship system. All grantees are required to identify the education and training, workforce, employer, and industry partners that will help develop and expand their registered apprenticeship programs.

Characteristics of the Grantees

This section briefly summarizes some features of the grantees based on their applications to DOL for funding under the grant program. Several types of grantees were awarded Youth Apprenticeship Readiness Grants, including six workforce intermediaries, four postsecondary institutions or agencies, two noneducation state agencies, one secondary school system, and one workforce development agency. All workforce intermediary grantees have a broad mission to connect people to work, but some had more specific missions. For example, AMI Kids, Inc., serves at-risk youth and Easter Seals TriState LLC serves people with disabilities. Although only one secondary school system is a grantee (the Delaware Department of Education), most grantees are partnering with a secondary school partner.

Youth Apprenticeship Readiness grantees were awarded between almost \$1.5 million and \$5.0 million, depending on the number of apprentices they proposed to support in their applications. All grantees have committed to serving at least 200 youth apprentices, with the largest grantees supporting over 1,000 youth apprentices. Four of the 14 grantees have pre-apprentice targets in addition to their registered apprentice targets. Pre-apprenticeship will be used by these grantees as a recruitment strategy for identifying candidates for apprenticeship programs and providing a baseline level of skills and commitment for all new apprentices. Each of the grantees planning to support pre-apprenticeship training also indicated that they will recruit out-of-school youth, a community that can be particularly difficult to recruit and cannot be recruited within high schools.

TABLE 2
Youth Apprenticeship Readiness grantee profiles, 2020

Grantee	Grantee type	Focal industry or occupation	Funding	Target
AMI Kids, Inc.	Workforce intermediary serving at-risk youth	Construction	\$2,499,999	500 pre-apprentices 400 apprentices
Alamo Community College District (Palo Alto College)	Postsecondary education	Manufacturing, financial services	\$4,470,000	1,200 pre-apprentices 800 apprentices
Alaska Works Partnership, Inc.	Workforce intermediary	Health care, maritime, construction	\$1,964,547	1,050 apprentices
Board of Regents, Nevada Systems of Higher Education	Postsecondary education	Health care, advanced manufacturing, information technology, construction, mining	\$2,496,233	400 apprentices
CareerWise Colorado	Workforce intermediary	Financial services, advance manufacturing, real estate, information technology, multi-industry	\$5,000,000	900 apprentices
Delaware Department of Education	Secondary education	Construction, hospitality, information technology	\$2,499,999	400 apprentices
Easter Seals TriState LLC	Workforce intermediary	Construction and deconstruction	\$1,499,628	200 apprentices
Idaho Workforce Development Council	Workforce development agency	Health care, social assistance, accommodation and food services, construction, manufacturing, retail trade, educational services, professional scientific and technical services	\$2,490,630	800 pre-apprentices 400 apprentices
Michigan Department of Labor and Economic Opportunity	State agency (noneducation)	Advanced manufacturing, construction, energy, health care, information technology, mobility	\$4,881,369	1,024 apprentices
National Restaurant Association Educational Foundation	Workforce intermediary representing the restaurant industry	Restaurant and food service	\$4,999,478	not indicated
Northwest Florida State College	Postsecondary education	Plumbing, carpentry, HVAC, culinary arts, paramedic	\$1,497,320	200 apprentices
Oklahoma Department of Commerce	State agency (noneducation)	Manufacturing, construction	\$1,499,999	200 apprentices
South Carolina State Board for Technical and Comprehensive Education	Postsecondary education	Advanced manufacturing, automotive, construction, health care, information technology, transportation, warehousing	\$4,499,999	230 pre-apprentices 800 apprentices
The WorkPlace	Workforce intermediary	Manufacturing	\$1,997,046	350 apprentices

Source: "Youth Apprenticeship Readiness Grant," Apprenticeship.gov applications and grant summaries, <https://www.apprenticeship.gov/awards/youth-apprenticeship-readiness-grant>, accessed February 2022.

Of the 14 Youth Apprenticeship Readiness grantees, 11 operated within a single state, with 3 grantees restricting activities to specific counties in a state. The single-state focus of the majority of grantees is similar to that of PAYA grantees and reflects the state-based secondary education systems that are critical to youth apprenticeship programs. Only 3 grantees planned to operate in multiple states: CareerWise Colorado, Easter Seals TriState LLC, and the National Restaurant Association Educational Foundation (NRAEF). CareerWise Colorado and NRAEF are scaling a successful apprenticeship model in multiple states across the country. Easter Seals TriState LLC is working in multiple states because its base of operations is in the tristate area of Ohio, Kentucky, and Indiana.

TABLE 3
Youth Apprenticeship Readiness grantee geography, 2020

Grantee	State of lead grantee	Geography covered by the grant
AMI Kids, Inc.	FL	Hillsborough and Pinellas Counties
Alamo Community College District (Palo Alto College)	TX	Atascosa, Bandera, Bexar, Comal, Guadalupe, Kendall, Kerr, and Wilson Counties and San Antonio, Seguin, New Braunfels, and Kerrville
Alaska Works Partnership, Inc.	AK	Statewide
Board of Regents, Nevada Systems of Higher Education	NV	Statewide
CareerWise Colorado	CO	CO, NY, IN, DC metropolitan area including MD and VA
Delaware Department of Education	DE	Statewide
Easter Seals TriState LLC	OH	OH, KY, IN
Idaho Workforce Development Council	ID	Statewide
Michigan Department of Labor and Economic Opportunity	MI	Statewide
National Restaurant Association Educational Foundation	DC	CO, DE, LA, MD
Northwest Florida State College	FL	Okaloosa and Walton Counties
Oklahoma Department of Commerce	OK	Statewide
South Carolina State Board for Technical and Comprehensive Education	SC	Statewide
The WorkPlace	CT	Statewide

Source: "Youth Apprenticeship Readiness Grant," Apprenticeship.gov grant applications and summaries, <https://www.apprenticeship.gov/awards/youth-apprenticeship-readiness-grant>, accessed February 2022.

Grantee Partners

Youth Apprenticeship Readiness grantees report a detailed list of partners in their grant applications that they will work with to develop and expand youth apprenticeship programs. Partner coordination

is required for any registered apprenticeship program that brings together classroom-based technical instruction providers with employers and, potentially, other support service providers. Partnerships are particularly important for youth apprenticeship programs, which must coordinate with high schools or other youth-serving organizations in addition to the traditional apprenticeship partners, and which may require additional support services for apprentices who are transitioning into adulthood (Kuehn 2021).

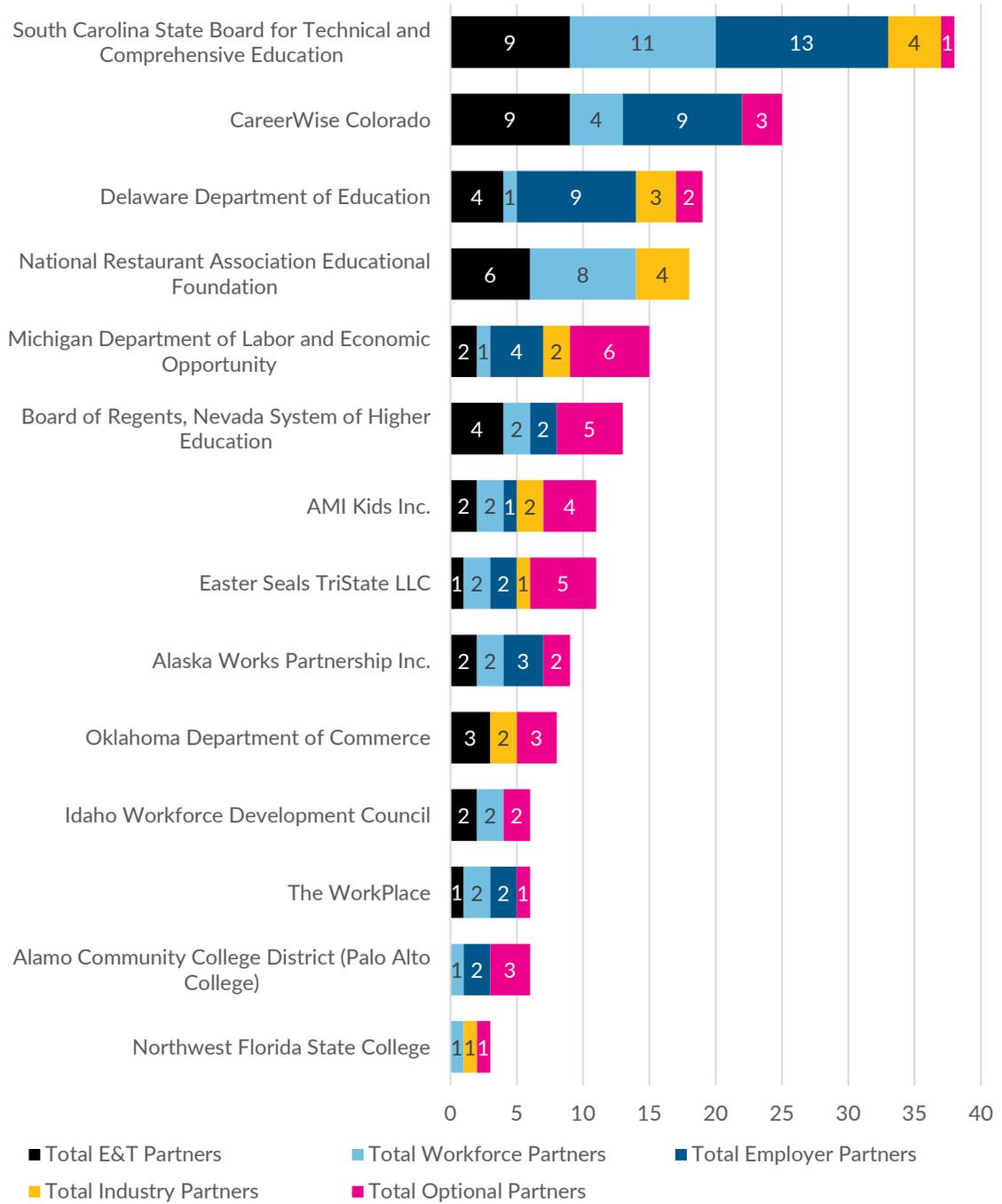
Grantees identified a mix of education and training, workforce, employer, industry, and optional partners in their applications (figure 7). Grant applications indicate partnerships that were in place at the time of application with a letter of support and may not be exhaustive of all partners that will be built over the course of the grant.

The South Carolina State Board for Technical and Comprehensive Education and CareerWise Colorado reported the most partners in their applications. South Carolina's strong partnerships reflect its large number of existing employer partners²⁷ and the statewide system of technical colleges and workforce boards participating in the grant. CareerWise Colorado's large number of partners (25 identified in the application) reflects its multistate grant activities. CareerWise's partners operate across Colorado, Indiana, Washington, D.C., and New York State.

Grantees with fewer named partners tended to have lower apprentice targets and reported that they would take on many traditional partner roles themselves. For example, Alamo Community College District and Northwest Florida State College (NWFSC) reported that they did not identify education and training partners because they would be providing the RTI for their apprentices. NWFSC also planned to sponsor several of its registered programs, reducing its reliance on other intermediary organizations.

An important focus of the Youth Apprenticeship Readiness Grant implementation evaluation will be to track grantees' partners and standardize the description of grant partner roles across grantees. The evaluation will describe different models for youth apprenticeship partnerships to inform future youth apprenticeship program development.

FIGURE 7
Number of partners of Youth Apprenticeship Readiness grantees



URBAN INSTITUTE

Source: “Youth Apprenticeship Readiness Grant,” Apprenticeship.gov grant applications and summaries, <https://www.apprenticeship.gov/awards/youth-apprenticeship-readiness-grant>, accessed February 2022.

Notes: E&T = Education and Training. Employer partners are individual employers partnered with the Youth Apprenticeship Readiness grantee. Industry partners are industry association partners.

Key Areas of Interest for the Youth Apprenticeship Readiness Grant Evaluation

There are several issues and areas of interest that the Youth Apprenticeship Readiness grant evaluation should focus on based on current experiences with youth apprenticeship in the U.S. and important knowledge gaps.

- First, based on an analysis of RAPIDS data, while many registered apprentices in the U.S. are ages 16 to 24 at registration, only 7.9 percent of these youth apprentices were of high school age at registration (ages 16 to 18) in 2021. The evaluation should document how grantees' strategies for recruiting, supporting, and retaining younger youth apprentices (ages 16 to 18) differ from strategies for recruiting, supporting, and retaining older youth apprentices (ages 19 to 24).
- Second, most registered youth apprentices in the U.S. are not registered with programs that exclusively serve youth apprentices. In other words, the large majority of registered youth apprentices in the U.S. are trained in adult apprenticeship programs. Registration with an apprenticeship program that exclusively serves youth apprentices is more common for younger youth apprentices (ages 16 to 18). Grantees are not explicitly tasked with registering programs that exclusively serve youth apprentices, but the evaluation should document the extent to which grantees develop and expand programs that exclusively serve youth apprentices and how developing and expanding those programs differs from expanding adult apprenticeship programs that enroll some youth apprentices. This would include any differences in the length, milestones, certifications, and competencies between adult apprenticeship programs that enroll some youth and programs that exclusively serve youth apprentices.
- Third, many youth apprenticeship programs in the U.S. are currently unregistered and do not meet the minimum training standards of registered apprenticeship programs.²⁸ Youth Apprenticeship Readiness grant funds must be used to support registered apprenticeships, but grantees can build on existing unregistered training opportunities and register programs with OA or an approved SAA. The evaluation should examine the extent to which grantees register

previously unregistered youth apprenticeship programs to understand how those efforts differ from developing new registered youth apprenticeship programs.

- Finally, this report highlights the importance of partnerships in youth apprenticeship programs. The evaluation should carefully track and describe grantee partnerships and document potentially promising or innovative partnership models that support registered youth apprenticeship programs.

Appendix: Youth Apprenticeship Readiness Grantee Summaries

AMI KIDS, INC.

AMI Kids, Inc., provides services to youth who have been involved in the justice system. Through a partnership with Associated Builder and Contractors (ABC) Florida Gulf Coast, AMI Kids will support 500 pre-apprentices and 400 apprentices. Participants will mostly be justice-involved youth in the 18 to 20 age range who are out of school and will be offered the opportunity to earn their high school diplomas if needed. The pre-apprenticeship involves the completion of several certificates and training credentials.

- Construction is the targeted industry with occupation options that include carpenter, mason, electrician, plumber, and pipefitter. ABC Florida Gulf Coast serves as the sponsor.
- RTI begins simultaneously with OJT. RTI is provided by the local community and technical colleges.

ALAMO COMMUNITY COLLEGE DISTRICT (PALO ALTO COLLEGE)

The Alamo Community College District is creating two new apprenticeship programs and expanding one. These programs will serve 1,200 pre-apprentices and 800 apprentices. Most apprentices will be in the 18 to 19 age range and out of high school. Alamo plans to increase high school involvement, so later in the grant period, more youth ages 16 to 18 will be involved. Youth served will be first-generation students and youth aging out of foster care.

- The targeted industries are financial services and advanced manufacturing. For the existing program, Cox Manufacturing is the sponsor.
- The RTI and OJT sequence will vary by program. Alamo will provide the RTI and pre-apprenticeship training. When possible, pre-apprenticeship courses will count toward RTI.

ALASKA WORKS PARTNERSHIP, INC.

Alaska Works Partnership, Inc., is a workforce intermediary that delivers training and support for individuals interested in apprenticeship. Targets are the creation of 10 new registered apprenticeship programs and the expansion of 55. There will be 330 new apprentices and 1,050 total participants served through training and pre-apprenticeship activities. Apprentices supported by the Youth

Apprenticeship Readiness grant will generally be 18 and older and not currently in high school. These apprentices will register with programs that are also open to adults. Younger participants (ages 16 to 18) will be reached through pre-apprenticeship programs provided by various partners with the hope that these will be feeders for registered apprenticeship after participants turn 18.

- The primary industries targeted with these programs are construction, maritime, and health care. Program sponsorship is mixed between employers and Alaska Works.
- The design of RTI and OJT varies by industry, but typically there are at least four to six weeks of classroom training prior to beginning OJT, with the opportunity for more specialized RTI later in the program.

BOARD OF REGENTS, NEVADA SYSTEMS OF HIGHER EDUCATION

The Nevada System of Higher Education is partnering with employers and community colleges to create 16 new registered programs and expand 2 existing programs. Through these programs, it will serve 640 participants and enroll 400 new youth apprentices. Participants are mostly out-of-school youth ages 18-24, but high school students are reached through apprenticeship readiness programs.

- The primary industries targeted with these programs are advanced manufacturing, information technology, health care, construction, and mining. The Nevada System of Higher Education is the sponsor for most programs unless an employer is already a sponsor
- The RTI is provided by community colleges, and the OJT and RTI usually occur simultaneously.

CAREERWISE COLORADO

CareerWise Colorado is a workforce intermediary that has expanded its work to Indiana, New York, and the Washington, D.C., metropolitan area. Targeted goals are the expansion of the program nationally and the creation of new programs to serve 900 apprentices. Programs will be three years long, typically with participants starting in their junior year and finishing the program one year after completing high school. CareerWise provides a closed apprenticeship marketplace that connects schools and employers. It also facilitates a bootcamp that occurs prior to the apprenticeship that helps build professional skills and core competencies.

- National industries include information technology, insurance, manufacturing, computer numerical control, and industrial technology manufacturing, among others in the works. Generally, programs are employer-led with sponsorship.

- In the first year of the program, students spend about two days on the job, then three days their second year, and then full time their final year. RTI is provided by high schools, high school CTE programs, and local or online community colleges when needed.

DELAWARE DEPARTMENT OF EDUCATION

The Delaware Department of Education will be supporting at least 400 youth apprentices ages 16 to 24. Targets are the creation of 20 new registered apprenticeship programs and the expansion of 70. About 60 percent of the apprentices will be in school and 40 percent will be out of school. Most apprentices will start in pre-apprenticeships that are programmed through CTE at technical schools. Students will earn college credit through these programs and feed into registered apprenticeships.

- The primary industries targeted with these programs are hospitality, tourism, and information technology. Programs are typically sponsored by the employer.
- The design of RTI and OJT varies by industry, some programs starting with classroom training and others beginning simultaneously. RTI is provided by technical schools and community colleges, depending on the industry.
- Apprenticeship creation in the same industries targeted by the Delaware Department of Education's Youth Apprenticeship Readiness Grant is supported by the Building State Capacity to Expand Apprenticeship through Innovation grant.²⁹

EASTER SEALS TRISTATE LLC

Easter Seals TriState LLC is a pre-apprenticeship provider that partners with Allied Construction Industries to provide apprenticeships in construction for youth. Targets are the creation of one new registered apprenticeship program and the expansion of four. The program will serve 320 participants total and enroll 200 apprentices, all of whom have economic disadvantages. About two-thirds of participants will be out of school and one-third will be in school. Some individuals complete pre-apprenticeship before apprenticeship enrollment.

- The primary industries targeted with these programs are construction and deconstruction. ACI, the local industry association partner, is the program sponsor.
- RTI is provided by Allied Construction Industries at its facilities or at partner employer sites. The program aim is to have OJT start with the apprenticeship.

IDAHO WORKFORCE DEVELOPMENT COUNCIL

The Idaho Workforce Development Council is creating 300 new apprenticeship programs and expanding 75 existing programs. These will support 400 apprentices who feed into the program as high school students and continue after high school, depending on program length.

- Industries targeted include health care and social assistance, accommodation and food services, construction, manufacturing, retail trade, education services, and professional, scientific, and technical services. Programs are employer sponsored.
- The design of RTI and OJT varies by industry, but they typically begin simultaneously. RTI is provided by schools that have the capacity and by community colleges, online, and at union training centers.

MICHIGAN DEPARTMENT OF LABOR AND ECONOMIC OPPORTUNITY

The Michigan Department of Labor and Economic Opportunity is facilitating the creation of the Michigan Youth Apprenticeship Readiness Network (MiYARN) program. This program establishes Regional Implementation Consortia that form employer-school partnerships. This network will create 120 new registered apprenticeship programs and expand 96, serving a total of 2,048 participants with readiness activities, including pre-apprenticeships and 1,024 apprenticeships. The primary focus is to give secondary students the opportunity to experience registered apprenticeship, but the program will also serve a significant number of out-of-school youth.

- Industries include advanced manufacturing, construction, energy, health care, information technology, and mobility. Program sponsors are mostly employers, but the grantee will sponsor if needed.
- RTI is largely provided through high school CTE programs and dual enrollment with local community and middle colleges. RTI is frequently front-loaded with OJT opportunities in the summer when students are free; however, the model is flexible.
- Youth apprenticeship in the state is supported by a Building State Capacity to Expand Apprenticeship through Innovation grant.

NATIONAL RESTAURANT ASSOCIATION EDUCATIONAL FOUNDATION

NRAEF is a nonprofit and workforce intermediary associated with the National Restaurant Association. NRAEF helps with training and apprenticeship for culinary programs. Targets are the expansion of the program employer base and the increase of apprentice numbers in existing programs. These activities will serve 3,000 participants and result in 900 apprentices. There are two main

programs, one that serves students in 11th and 12th grade (ProStart) and one that provides general job readiness programming for out-of-school youth (Restaurant Ready).

- Occupations included in this program are all in the restaurant and food service industry. NRAEF is the sponsor.
- RTI is provided by the National Restaurant Association and, as necessary, in person by the employer. Apprentices begin OJT with RTI. Participants in the ProStart program can count credit from prior learning experience before the start of the apprenticeship.
- Youth apprenticeship in Maryland is supported by a Building State Capacity to Expand Apprenticeship through Innovation grant.

NORTHWEST FLORIDA STATE COLLEGE

NWFSC is establishing three new apprenticeship programs and expanding three existing programs. There will be 200 new apprentices who are primarily out-of-school college-age young people (ages 18 to 24).

- Industries in the program include paramedic, plumbing, carpentry, and heating, ventilation, and air conditioning (HVAC)
- NWFSC will provide RTI on the main campus and at a new facility, hiring adjunct instructors as necessary. Program sponsorship is a mix between NWFSC and its partners. Typically, participants are engaged with OJT immediately, but this may vary by program.

OKLAHOMA DEPARTMENT OF COMMERCE

The Oklahoma Department of Commerce is developing 25 new registered apprenticeship programs and expanding 15 programs. These will serve 225 total participants and 200 apprentices. Most participants will be out-of-school youth who have barriers to employment. Some high school students will be served with pre-apprenticeship activities in CTE programs that will act as a recruitment source for apprenticeships.

- Industries targeted include manufacturing and construction. Employers will be sponsors, but the state agency will be the sponsor, if necessary, with an industry association acting as intermediary.
- The design of RTI and OJT varies by program. RTI will be provided largely by employers and union programs.

SOUTH CAROLINA STATE BOARD FOR TECHNICAL AND COMPREHENSIVE EDUCATION

The South Carolina State Board for Technical and Comprehensive Education is a state college coordinating entity working to develop 85 new registered youth apprenticeship programs and expand 155 programs. These programs will serve 1,030 youth with 230 pre-apprenticeship and 800 apprenticeship participants. Supported youth will be both high school age and older. The registered youth apprenticeship program targets high school juniors and seniors and out-of-school youth, and the pre-apprenticeship program is aimed at students in 9th and 10th grades.

- The primary industries targeted with these programs are advanced manufacturing, automotive, construction, health care, information technology, transportation, and warehousing, and varies by region of the state. Employers are program sponsors.
- RTI will mostly be provided by technical colleges and high schools that have dual-enrollment articulation agreements with the technical colleges. The sequence of RTI and OJT is customized by each program depending on employer and student needs.
- Youth apprenticeship in the state is supported by a Building State Capacity to Expand Apprenticeship through Innovation grant.

THE WORKPLACE

The WorkPlace is a workforce development board in Connecticut that provides support for youth apprenticeships in the construction industry. This program is creating 10 new registered apprenticeship programs and expanding 2 programs. There will be 400 pre-apprentices and 350 enrolled apprentices. The program targets primarily students in 11th and 12th grades with a focus on recruiting underrepresented populations.

- The primary industries targeted with these programs are construction and some manufacturing. Employers are sponsors, but the program is looking into having workforce boards also sponsor programs.
- RTI is provided by The WorkPlace and other education partners. The pre-apprenticeship curriculum is 8 to 10 weeks of instruction that counts toward the RTI requirements. After front-loading classroom training, participants begin OJT and continue RTI.
- Youth apprenticeship in the state is supported by a Building State Capacity to Expand Apprenticeship through Innovation grant.

Notes

- ¹ Figures are for registered apprenticeship in states that report data on individual apprentices to the federal government. Authors' calculations from the Registered Apprenticeship Partners Information Database System (RAPIDS), <https://www.dol.gov/agencies/eta/apprenticeship/about/statistics/2021>. See figure 1 for details.
- ² "Youth Apprenticeship Program," Georgia Department of Education, accessed May 12, 2021, <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Youth-Apprenticeship-Program.aspx>.
- ³ It is difficult to quantify the number of youth apprenticeship programs in the U.S. because there is no standardized definition of youth apprenticeship programs that could help to distinguish a youth registered apprenticeship program from other registered apprenticeship program. No data are collected on unregistered apprenticeship programs. Although the scale of these programs is difficult to quantify exactly, this report describes prominent registered and unregistered youth apprenticeship programs.
- ⁴ Other efforts included in the Evidence-Building Portfolio include the Scaling Apprenticeship and Closing the Skills Gap grant programs, the Building State Capacity to Expand Apprenticeship through Innovation grants to states, the Veterans Employment Transition Services Apprenticeship Pilot, and the Women in Apprenticeship and Nontraditional Occupations grants.
- ⁵ In addition to the implementation evaluation of the Youth Apprenticeship Readiness grants, the Apprenticeship Evidence-Building Portfolio currently includes an implementation study and an impact study of the Scaling Apprenticeship and Closing the Skills Gap grant programs, an implementation evaluation of the Veterans Employment and Training Service Apprenticeship Pilot, an implementation evaluation of the Building State Capacity to Expand Apprenticeship through Innovation grants, and a descriptive study of the Women in Apprenticeship and Nontraditional Occupations grants.
- ⁶ For more information, see DOL's web page on registered apprenticeship programs at <https://www.apprenticeship.gov/employers/registered-apprenticeship-program>. To become a registered apprenticeship, the program must present its standards in a document that specifies the details of its OJT, RTI, wage progression as a part of the work-based experience, and offered credentials. The program is registered after document approval by DOL or an SAA.
- ⁷ For more information, see DOL's web page on pre-apprenticeship at <https://www.apprenticeship.gov/help/what-pre-apprenticeship>.
- ⁸ For more information, see DOL's web page on youth apprenticeship at <https://www.apprenticeship.gov/educators/high-school-and-middle-school>.
- ⁹ Authors' calculations from the RAPIDS database. See figure 1 for details.
- ¹⁰ Authors' calculations from the Registered Apprenticeship Partners Information Data System (RAPIDS). See figure 5 for share of youth apprentices registered in a youth apprenticeship program by registration age.
- ¹¹ Both CareerWise and the South Carolina State Board for Technical and Comprehensive Education are Youth Apprenticeship Readiness grantees. The South Carolina Board is not an intermediary itself, although many of the youth apprenticeship programs in the state use an intermediary model.
- ¹² National Conference of State Legislatures, "Apprenticeships in K-12 and Higher Education," November 9, 2020, <https://www.ncsl.org/research/education/apprenticeships-in-k-12-and-higher-education.aspx>.
- ¹³ In most states, free education must be offered to residents who are up to 21 years old or even older (https://nces.ed.gov/programs/statereform/tab5_1.asp), so some apprentices older than age 18 may still be enrolled in high school.

- ¹⁴ The percent is calculated by dividing 7,680 by the number of active youth apprentices in 2002, from figure 1.
- ¹⁵ Some youth apprentices are recorded in RAPIDS as being associated with states that do not use the RAPIDS database if the youth apprenticeship program is geographically located in the state but registered nationally. Inclusion of these youth apprentices would give an incomplete picture of youth apprenticeship in the state, because the youth apprentices registered with the state's SAA would not be included in the total count.
- ¹⁶ "Youth Apprenticeship Program," Georgia Department of Education, accessed May 12, 2021, <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Youth-Apprenticeship-Program.aspx>.
- ¹⁷ "Youth Apprenticeship Program," Georgia Department of Education, accessed May 12, 2021, <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Youth-Apprenticeship-Program.aspx>.
- ¹⁸ "Youth Apprenticeship Frequently Asked Questions—Maryland Apprenticeship and Training Program," Maryland Department of Labor, accessed May 12, 2021, <https://www.dllr.state.md.us/employment/appr/youthapprfaqs.shtml>.
- ¹⁹ "Youth Apprenticeship," Youth Apprenticeship Carolina, SC Technical College System, accessed May 12, 2021, <https://www.apprenticeshipcarolina.com/youth-apprenticeship.html>.
- ²⁰ Registered apprenticeship programs must have a minimum of 2,000 hours of on-the-job learning. Standards of Apprenticeship, 29 CFR § 29.5 (July 1, 2011).
- ²¹ "TRACK: Tech Ready Apprentices for Careers in Kentucky," Kentucky Department of Education, March 9, 2021, <https://education.ky.gov/CTE/cter/Pages/TRACK.aspx>.
- ²² "Why Build a Registered Apprenticeship Program?" Earn and Learn: Iowa's Registered Apprenticeship Programs, accessed May 12, 2021, <https://www.earnandlearniowa.gov/educators>. For direct list, see "Quality High School Registered Apprenticeship Programs," <https://www.earnandlearniowa.gov/high-school-programs>.
- ²³ "Partnership to Advance Youth Apprenticeship," New America, accessed May 12, 2021, <https://www.newamerica.org/education-policy/partnership-advance-youth-apprenticeship/about/our-grantees/>.
- ²⁴ Taylor White, "Application Now Open for The Partnership to Advance Youth Apprenticeship Grant Initiative" Education Policy (blog), New America, January 16, 2019, <https://www.newamerica.org/education-policy/edcentral/paya-grant-initiative-open/>.
- ²⁵ "Partnership to Advance Youth Apprenticeship," New America, accessed May 12, 2021, <https://www.newamerica.org/education-policy/partnership-advance-youth-apprenticeship/about/our-grantees/>.
- ²⁶ DOL, "U.S. Department Of Labor Announces over \$42 Million in Youth Apprenticeship Readiness Grant Awards to Increase Youth Participation in Registered Apprenticeships," news release no. 20-1274-NAT, June 30, 2020, <https://www.dol.gov/newsroom/releases/eta/eta20200630-1>.
- ²⁷ Apprenticeship Carolina works with 1,203 registered apprenticeship programs as of February 2022, each of which must include at least one employer partner, <https://www.apprenticeshipcarolina.com/>.
- ²⁸ Standards of Apprenticeship, 29 CFR § 29.5 (July 1, 2011).
- ²⁹ For details, see DOL, "US Department Of Labor Awards More Than \$80 Million in Grants to Expand Registered Apprenticeship in 42 States and Territories," news release no. 20-1265-NAT, June 30, 2020, <https://www.dol.gov/newsroom/releases/eta/eta20200630-2>.

References

- Adams, Gina, Heather Hahn, and Amelia Coffey. 2021. "Stabilizing Young People Transitioning to Adulthood: Opportunities and Challenges with Key Safety Net Programs." Washington, DC: Urban Institute.
- Advance CTE. 2019. *The Role of Data and Accountability in Growing Youth Apprenticeship Programs*. Silver Spring, MD: Advance CTE.
https://cte.careertech.org/sites/default/files/files/resources/AdvanceCTE_YouthApprenticeship_Data_2019.pdf.
- . 2020. *Improving Youth Apprenticeship Data Quality: Challenges and Opportunities*. Silver Spring, MD: Advance CTE.
https://cte.careertech.org/sites/default/files/files/resources/Improving_Youth_Apprenticeship_Data_Quality_2020.pdf.
- Apprenticeship Maryland. 2019. *Youth Apprenticeship Advisory Committee Annual Report*. Annapolis, MD: Maryland Department of Labor. <https://www.dllr.state.md.us/employment/appr/youthapprannrep2019.pdf>.
- ApprenticeshipNC. 2018. *North Carolina Youth Apprenticeship Guide*. Raleigh, NC: North Carolina Community College System. https://www.apprenticeshipnc.com/sites/default/files/file-uploads/nccc-printablehandbook-final-r1-print_quality.pdf.
- Baddour, Kristin, and Kimberly Hauge. 2020. "How Governors Scale High-Quality Youth Apprenticeship." Washington, DC: National Governors Association. <https://www.nga.org/wp-content/uploads/2020/03/PAYA-White-Paper-Final-115424-2.pdf>.
- Bailey, Thomas, and Donna Merritt. 1993. "The School-to-Work Transition and Youth Apprenticeship: Lessons from the US Experience." New York, NY: MDRC. <https://files.eric.ed.gov/fulltext/ED356322.pdf>.
- Conrad, Ashley, Kathleen Fitzpatrick, Karoline Jarr, Janay McClarin, Ricardo Romanillos, Martina Sharp-Grier, and Ben Williams. 2020. *Equity in Youth Apprenticeship Programs*. Gap, PA: National Alliance for Partnerships in Equity. <https://napequity.org/wp-content/uploads/PAYA-Workbook-Fnl-2020-05-29.pdf>.
- DWD (Department of Workforce Development). 2020. *Wisconsin Youth Apprenticeship Manual: Regulations, Policies and Procedures*. Madison, WI: State of Wisconsin.
<https://dwd.wisconsin.gov/apprenticeship/ya/pdf/ya-rpp-manual-2020.pdf>.
- ESG (Education Strategy Group) and PAYA (Partnership to Advance Youth Apprenticeship). 2019. *The Critical Role of Intermediary Organizations in Expanding Youth Apprenticeship*. Chevy Chase, MD: ESG.
<http://edstrategy.org/wp-content/uploads/2019/11/ESG-Youth-apprenticeship-12092019-update.pdf>.
- Fuller, Joseph B., and Matthew Sigelman. 2017. *Room to Grow: Identifying New Frontiers for Apprenticeships*. Boston, MA: Harvard Business School and Burning Glass Technologies. <https://www.hbs.edu/managing-the-future-of-work/Documents/room-to-grow.pdf>.
- Gaal, John S. 2018. "Recruiting Younger Apprentices: Three Vignettes, Three Approaches." *Benefits Magazine* 55 (3): 30–35.
- Holzer, Harry J., and Robert I. Lerman. 2014. "Work-Based Learning to Expand Opportunities for Youth." *Challenge* 57 (4): 18–31.
- Jacoby, Tamar, and Ron Haskins. 2020. *Kentucky FAME: Fulfilling the Promise of Apprenticeship*. Washington, DC: Opportunity America and Brookings. <https://opportunityamericaonline.org/wp-content/uploads/2020/10/KY-FAME-final-final.pdf>.
- Karas, Andrew, and Robert I. Lerman. 2016. *Implementing Financial Education in Youth Apprenticeship Programs*. Washington, DC: Urban Institute.

- Katz, Batia, and Diana Elliott. 2020. "CareerWise: Case Study of a Youth Apprenticeship Intermediary." Washington, DC: Urban Institute.
- Kreamer, Kate Blosveren, and Andrea Zimmermann. 2017. "Opportunities for Connecting Secondary Career and Technical Education (CTE) Students and Apprenticeship Programs." Washington, DC: U.S. Department of Education.
https://s3.amazonaws.com/PCRN/reports/Opportunities_for_Connecting_Secondary_CTE_Students_and_Apprenticeship_Programs.pdf.
- Kuehn, Daniel. 2021. *Building an Apprenticeship Infrastructure for Youth Receiving SSI*. SSI Youth Solutions. Princeton, NJ: Mathematica.
https://www.dol.gov/sites/dolgov/files/ODEP/pdf/SSI_Youth_Kuehn_Final_Proposal.pdf.
- Lerman, Robert I. 2003. "Is the School-to-Work Movement on the Right Track?" In *The School-to-Work Movement: Origins and Destinations*, edited by William J. Stull and Nicholas M. Sanders, 221–238. Westport, CT: Praeger.
- . 2013. "Are Employability Skills Learned in US Youth Education and Training Programs?" *IZA Journal of Labor Policy* 2(1), 6.
- . 2015. "Apprenticeships: Helping Youth Develop the Skills Needed by Today's Employers." Madison, WI: Wisconsin Family Impact Seminars. <https://www.purdue.edu/hhs/hdfs/fii/wp-content/uploads/2015/12/Lerman.pdf>.
- Lerman, Robert, Daniel Kuehn, and Jessica Shakesprere. 2019. *Youth Apprenticeship in Georgia: Experiences and Recommendations*. Washington, DC: Urban Institute. https://georgiaopportunity.org/wp-content/uploads/2019/04/19_043_GCO_Urban_Inst_Pres_Web.pdf.
- Lerman, Robert, and Arnold Packer. 2015. *Youth Apprenticeship: A Hopeful Approach for Improving Outcomes for Baltimore Youth*. *The Abell Report* 28 (2).
- Mindham, Joel, and Deanna Schultz. 2019. "The Impact of Youth Apprenticeship and Employability Skills Programs on Career and Technical Education Concentrator-Completer Post Graduation Outcomes." *Career and Technical Education Research* 44 (3): 3–14.
- Office of Career, Technical, and Adult Education. 2021. *Expanding Work-Based Learning Opportunities for Youth: Insights from the Field*. Washington, DC: U.S. Department of Education.
<https://s3.amazonaws.com/PCRN/file/WBL-RFI-Comments-Summary.pdf>.
- Parton, Brent. 2017. *Youth Apprenticeship in America Today: Connecting High School Students to Apprenticeship*. Washington, DC: New America. <https://d1y8sb8igg2f8e.cloudfront.net/documents/Youth-Apprenticeship-Today.pdf>.
- Rice, Olivia, Jordan Hudson, Laura Rasmussen Foster, and Steven Klein. 2016. *Connecting Secondary Career and Technical Education and Registered Apprenticeship: A Profile of Six State Systems*. Washington, DC: U.S. Department of Education.
https://s3.amazonaws.com/PCRN/reports/Connecting_Secondary_CTE_and_Registered_Apprenticeship.pdf.
- Scott, Molly M., Jessica Shakesprere, and Kristen Porter. 2020. *Making Education and Employment Work for High School Students: A Toolkit for Systems That Support Young People with Adult Responsibilities, with Benefits for All*. Washington, DC: Urban Institute.
- Spaulding, Shayne, Ian Hecker, and Emily Bramhall. 2020. *Expanding and Improving Work-Based Learning in Community Colleges: Better Data and Measurement to Realize Goals for Students and Employers*. Washington, DC: Urban Institute.
- Standafer, Elizabeth. 2019. "The Experiences of Black Male Apprentices." In *Skilling Up: The Scope of Modern Apprenticeship*, edited by Ervin Dimeny, Deborah Williamson, Lisa Yates, and David Hinson, 162–171. Washington, DC: Urban Institute.

- Sterrett, David, Dan Malato, Will Bonnell, Mia Stripp, and Jennifer Benz. 2020. *Skilled Trades in High School: What Voters, Parents, and Students Want from Policymakers and Educators*. Calabasas, CA: Harbor Freight Tools for Schools. <https://harborfreighttoolsforschools.org/wp-content/uploads/20.05.08-NORC-poll.pdf>.
- Steva, Erin. 2017. *Making Youth Apprenticeships Work for Illinois' Young Adults: Community Recommendations on Youth Apprenticeships*. Washington, DC: Young Invincibles.
- Wallace, Rebecca. 2018. *Report for the Legislature: Promoting Pre-Apprenticeship Opportunities for High School Students, 2018*. Olympia, WA: Office of the Superintendent of Public Instruction, Washington State. <https://files.eric.ed.gov/fulltext/ED595888.pdf>.
- Monthey, Wanda. 2019. "The Critical Role of Apprenticeship Programs." *State Education Standard* 19 (3): 30–46.

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