State Incentives to Promote and Support Apprenticeship

Takeaways from Eight States

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This brief explores how states use financial incentives to expand Registered Apprenticeship (RA) programs and their efforts to achieve targeted goals. *Incentives* are additional financial supports used to increase the number of RA programs and offset the cost for employers (Rosenberg and Dunn 2020) in the form of state tax credits or subsidies to apprenticeship sponsors,[1] related technical instruction (RTI)[2] providers, and other entities responsible for developing RA programs. Little is known about how incentives are structured and how they are used to achieve state goals for expansion, such as attracting new employers, increasing the number of apprenticeships, expanding to new industries, and reaching targeted populations. We aim to understand incentives used with RA programs by elevating insights from the following eight states: Arkansas, California, Connecticut, Florida, Maryland, Michigan, Minnesota, and Mississippi.[3] Participating state agency representatives from these states reported they viewed incentives as helpful for attracting employers to apprenticeships and expanding access

[1] An apprenticeship sponsor is any person, association, committee, or organization that operates an apprenticeship program. Sponsors can be individual employers, unions, or groups of employers (29 CFR 29.2).

[2] RTI is classroom training for apprentices.

[3] Websites for each state's apprenticeship programs follow: Arkansas (https://arkansasosd.com/apprenticeship/), California (https://www.dir.ca.gov/das/das.html), Connecticut (https://portal.ct.gov/dol/Divisions/Apprenticeships?language=en_US), Florida (https://www.fldoe.org/academics/career-adult-edu/apprenticeship-programs/), Maryland (https://www.dllr.state.md.us/employment/appr/), Michigan (https://www.michigan.gov/leo/bureaus-agencies/wd/apprenticeships), Minnesota (http://www.apprenticeship.mn.gov/), and Mississippi (https://mdes.ms.gov/i-need-a-job/job-searching-resources/training-education/mississippi-apprenticeship-program/).

to apprenticeships for underrepresented populations and nontraditional industries. Key challenges include the lack of awareness of incentives among employers, inability to attract certain types of employers, insufficient resources for marketing incentives, and the limitations of one-time, upfront funding to address issues with completion.

In recent years, the federal government and state governments have focused on expanding access to apprenticeships (Harrington et al. 2022; Rosenberg and Dunn 2020). However, some employers may be unaware of the benefits of apprenticeship, and they can be reluctant to start a program because of concerns about the costs or what is required to start a program (Kuehn et al. 2022). States can provide financial incentives to employers to increase the number of businesses offering apprenticeships and the number of apprenticeships available. Other strategies for expanding apprenticeship can include federal grants to employers or states, technical assistance on how to develop an apprenticeship provided by a state or federal government, or efforts to support apprenticeship through industry partnerships (Harrington et al. 2022).

The use of incentives by states has increased in recent years. The 2020 State Apprenticeship Survey illustrated that 80 percent of states reported using incentives to pay for workforce training and education, 67 percent of states reported funding apprenticeship RTI, and about 21 percent of states reported offering incentives to subsidize apprentices' wages. Many states introduced incentives in the two years preceding the survey (Rosenberg and Dunn 2020). The survey also indicated that incentives are more widely available in states that register apprenticeships through the state apprenticeship agency (SAA states) than in those where apprenticeships are registered through the U.S. Department of Labor (DOL)'s Office of Apprenticeship (OA states; Rosenberg and Dunn 2020). Incentives including tax credits, state and local wage subsidies, funding for workforce training and education, and RTI funding were all more prevalent in SAA states (Rosenberg and Dunn 2020).

The brief is part of the State Apprenticeship Systems Capacity Assessment Study funded by DOL, which is aimed at understanding how state apprenticeship systems operate to achieve goals (see box 1). This brief discusses how states use incentives to promote and expand apprenticeship, the benefits of incentives, and the challenges in the administration and implementation of incentives. The key takeaways in this brief draw from several research questions, including the following:

- What are the goals of incentives?
- What types of incentives are offered?
- What types of recipients are incentives directed toward?
- What are the circumstances in which incentives are used by states to develop sustainable apprenticeship programs and scale apprenticeship?
- What are the challenges in the administration and implementation of incentives?

BOX 1

Study Background

The **State Systems Capacity Assessment Study** involves a review and assessment of the capacity of state systems and their partners to design and implement Registered Apprenticeship (RA) programs and related services. For this study, a *state apprenticeship system* is defined as the state and local workforce agencies and their partners that work to prepare people for, or support people in, apprenticeship programs in their state or local area; agencies and partners that work to develop those opportunities, including the National Apprenticeship system, and activities those agencies and partners carry out for those purposes. Partners can include the public sector, nonprofits, employers, local industry, and trade organizations, as well as education and training providers.[a]

The Chief Evaluation Office (CEO) within the U.S. Department of Labor (DOL), in collaboration with DOL's Office of Apprenticeship (OA) and Office of Policy Development and Research (OPDR), commissioned this study, which is being led by the Urban Institute in partnership with Mathematica. It is part of a broader portfolio of work aimed at understanding strategies to expand apprenticeship. The definition above is not a term defined in Title 29 of the Code of Federal Regulations, Part 29 "Labor Standards for the Registration of Apprenticeship Programs," which provides definitions for both *state apprenticeship agencies* and *state apprenticeship councils*. This is instead an operational definition used only for the purposes of this study.

[a] Definition adapted from definition of state apprenticeship systems found in Eyster, Lauren, Christin Durham, Michelle Van Noy, and Neil Damron. 2016. "Understanding Local Workforce Systems." Washington, DC: Urban Institute. https://www.urban.org/sites/default/files/publication/78496/2000648-understanding-local-workforce-systems_1.pdf.

The brief draws from two virtual discussion groups conducted in December 2022 and January 2023. Each discussion group included four high-level state apprenticeship agency staff members, one staff member for each state in the study. The brief also draws from documentation provided on incentive programs and data from DOL's Registered Apprenticeship Partners Information Data System (RAPIDS). Throughout this brief, when a number is provided to demonstrate how many respondents agreed with a takeaway, this number should be viewed as a minimum because discussion group facilitators did not consistently ask for counts and not all topics were discussed in both groups. Takeaways from the virtual discussions should not be interpreted as representative of the experiences of all states. See the appendix for more information on the methodology and limitations. Box 2 defines apprenticeship terms used in this brief. Figure 1 shows key information on each state and its apprenticeship system.

BOX 2

Key Apprenticeship Terms[a]

Sponsor: Any person, association, committee, or organization that operates an apprenticeship program. A sponsor can be a single employer or consortium of employers, education and training entity, union, industry association, workforce development board, or community-based organization.

Intermediary: Entities that convene and connect industry, education, and community-based partners; inform program design; and assist with program implementation. Intermediaries can also sponsor RA programs.

On-the-job learning (OJL): Hands-on training at the job site provided to an apprentice from an experienced mentor.

Related technical instruction (RTI): Classroom instruction that complements an apprentice's OJL and teaches the apprentice the theoretical and technical subjects related to the apprentice's occupation. In California, RTI is known as Related and Supplemental Instruction.

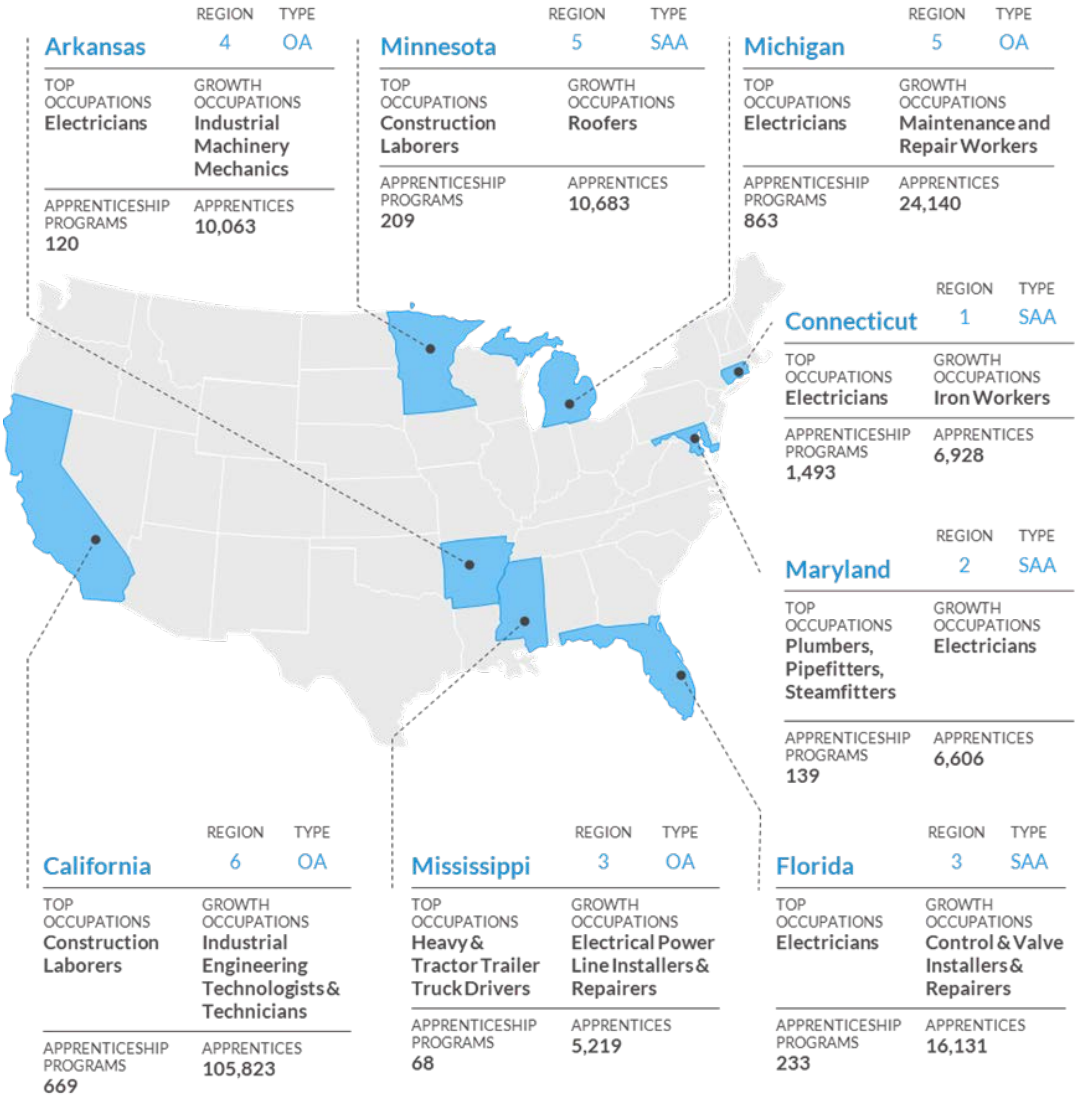
Office of Apprenticeship (OA): The office designated by the U.S. Department of Labor's Employment and Training Administration to register apprenticeship.

State apprenticeship agency (SAA): A state apprenticeship agency that registers apprenticeship within the state.

[a] Definitions adapted from 29 CFR 29.2; glossary of terms found in Gardiner, Karen, Daniel Kuehn, Elizabeth Copson, and Andrew Clarkwest. 2021. Expanding Registered Apprenticeship in the United States Description of American Apprenticeship Initiative Grantees and Their Programs. Report prepared for U.S. Department of Labor, Employment and Training Administration. Rockville, MD: Abt Associates and Washington DC: Urban Institute. https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/AAI%20Grant%20Program%20Description_Final.pdf; and Sattar, Samina, Jacqueline Kauff, Daniel Kuehn, Veronica Sotelo Munoz, Amanda Reiter, and Kristin Wolff. 2020. State Experiences Expanding Registered Apprenticeship: Findings from a Federal Grant Program. Princeton, NJ: Mathematica. https://wdr.doleta.gov/research/FullText_Documents/ETAOP2021-26_ETA_SAE_Final_Report_2020.pdf.

FIGURE 1

Select Registered Apprenticeship Data for Eight States in 2022



Source: Data for Arkansas, California, Florida, Maryland, Michigan, and Mississippi is from apprenticeship programs reporting to the Registered Apprenticeship Partners Information Data System (RAPIDS). Data for Connecticut is based on data provided by the Connecticut State Apprenticeship Council. Data for Minnesota is based on data provided by the Minnesota Department of Labor and Industry. Region numbers for states are drawn from the six apprenticeship regions defined by DOL.
Notes: OA states are those where apprenticeships are registered through the U.S. Department of Labor's Office of Apprenticeship (OA). SAA states are states that register apprenticeships through the state apprenticeship agency (SAA). Top occupations are defined as the detailed occupations (six-digit SOC codes) with the highest number of registered apprentices during 2022. Growth occupations are defined as the detailed occupations (six-digit SOC codes) with the highest percentage change in apprentices active between 2019 and 2022 and are restricted to occupations with at least 30 apprentices registered in 2019. In some cases, information may vary from data maintained by individual states, likely because of the timing of RAPIDS data submission and how data points are defined.

Overview of State Apprenticeship Incentives

State apprenticeship agency administrators that participated in the discussion groups shared common goals around the use of incentives to expand apprenticeship but varied in the structure and management of programs, amounts of funding for incentives, funding sources, and metrics used to track success.[4]

Goals of Incentives

In the discussion groups, seven state administrators indicated that the goal of financial incentives is to increase the total number of apprentices served and the number of employers operating RA programs. All interviewed states indicated that apprenticeship is a valuable pathway to employment, and incentives are intended to remove the cost barrier that prevents many employers from establishing RA programs. The representative from Arkansas noted that their incentives are also geared toward keeping apprentices' tuition expenses at a minimum. The representatives from Arkansas, California, and Michigan also said they have incentive programs that are geared at retention. For example, one of California's incentives includes a $1,000 completion bonus to the employer per apprentice, and another is built to provide partial funding upfront to be used for start-up costs and the rest of the funding upon the 90-day retention of an apprentice's employment and registration.[5]

The certain outcome that we care about is "x number" more apprenticeships created, because we all believe in this earn-and-learn pathway as being a really valuable pathway into employment…[so] we're trying to incentivize the creation of these programs and grants. —State apprenticeship administrator

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Structure of Incentive Programs

The eight state administrators offered different types of financial incentives, with variation in the incentive types, types of recipients, and administering agencies (table 1). Incentive types included tax credits and subsidies, either in the form of grants to defray the costs of starting a new apprenticeship program or reimbursements for apprenticeship expenses incurred. (For more detailed information on incentive programs, see appendix).

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[4] A future State Apprenticeship Capacity Assessment Study brief will focus on the metrics states use to collect data and measure apprenticeship expansion and success.

[5] See table A1 in the appendix for more detailed information on individual incentives.

Four of the eight states have one incentive program and four have multiple incentive programs. Arkansas, Connecticut, and Maryland offer tax credits for each apprentice registered to eligible employers that hire apprentices. California, Florida, Maryland, Michigan, Minnesota, and Mississippi offer competitive grants, and the representatives from Arkansas, California, and Maryland indicated that they provide reimbursements to various recipients, including sponsors, employers, intermediaries, to offset the costs of operating an apprenticeship program.

The agencies involved in the administration and expansion of incentive programs included departments and divisions responsible for labor and workforce development; finance, administration and taxation; higher education; and state legislatures. The representatives that participated in our discussion groups were responsible for administering apprenticeships from departments of labor, workforce development or education. Thus, they had more to say about subsidies because of the direct role that these agencies play in administering subsidy programs, in comparison to tax incentive programs, where they are validating eligibility for the tax incentive but not administering the incentive itself. One representative indicated that tax incentives must be passed by state legislatures and are therefore, often the result of industry lobbying efforts and might not entirely reflect a state apprenticeship agency's strategic priorities.

TABLE 1

Structure of Incentives Offered by Selected States for Registered Apprenticeship

State	Incentive types	Types of recipients	Administering agencies	Range of funding amounts
Arkansas	Subsidies,[a] tax credit	Sponsors, employers, intermediaries, education and training entities	Arkansas Office of Skills Development and Arkansas Department of Finance Administration	Subsidies: Dependent on program, up to $15,500 per apprentice Tax credit: Up to $2,000 per apprentice
California	Subsidies	Sponsors, employers, intermediaries, education and training entities, or workforce development boards	California Division of Apprenticeship Standards, California Community College Chancellor's Office, U.S. Department of Labor	Subsidies: $3,500–$15,000 per apprentice
Connecticut	Tax credit	Employers	Connecticut Department of Revenue Services	Tax credit: Up to $7,500 per apprentice in the manufacturing trades, $4,800 in the plastics trades, and $4,000 in the construction trades.
Florida	Subsidies	Sponsors	Florida Department of Education	$15 million total budget
Maryland	Subsidies, tax credit	Sponsors, employers, intermediaries, education and training entities	Maryland Department of Labor; U.S. Department of Labor	Subsidies: $1,000–$4,500 per apprentice Tax credit: $3,000 per apprentice for first five apprentices, and $1,000 per apprentice for all apprentices after the first five
Michigan	Subsidies	Employers	The Michigan Department of Labor and Economic Opportunity-Workforce Development	Subsidies: $2,232–$12,500 per apprentice
Minnesota	Subsidies	Sponsors	Minnesota Department of Labor and Industry	Subsidies: $300–$1,000 per apprentice
Mississippi	Subsidies	Employers, community colleges	U.S. Department of Labor	Subsidies for employers: up to $1,500 per apprentice Subsidies for community colleges: $200,000 to each recipient

Source: Information provided during the discussion group and follow-up information with participating apprenticeship administrators.

Note: See table A1 in the appendix for more detailed information on individual incentives.

[a] Subsidies include grants and reimbursements.

Recipients of Financial Incentives

States distribute financial incentives to a variety of recipients. In the discussion groups, representatives described four potential incentive recipients, all of which can serve as apprenticeship program sponsors: employers, education and training entities (including community colleges and local education agencies), intermediaries (including unions, employer or industry associations, community colleges, etc.), and workforce development boards or community-based organizations.[6] An apprenticeship program sponsor can be any employer or consortium of employers, intermediary, education entity, or community-based organization that operates a registered apprenticeship program.[7] Table 2 outlines these different types of incentive recipients, the role they play in apprenticeship, and how these recipients may potentially use incentives to offset apprenticeship-related costs.

TABLE 2

Types of Incentive Recipients, Their Roles, and Potential Uses of Incentives

Recipient	Potential uses of incentives
Employers	Apprentice wages, wages for mentors and other staff supporting apprentices, tuition for related technical instruction
Education and training entities (community colleges, local education agencies)	Related technical instruction, developing the related technical instruction curriculum
Intermediaries (often nonstate entities including unions, nonprofits, community colleges, etc.)	Employer recruitment, registered apprenticeship program implementation, apprenticeship recruitment, personnel costs
Workforce Development Boards or Community-based Organizations	Recruitment of employers and apprentices, supportive services

Sources: Sattar, Samina, Jacqueline Kauff, Daniel Kuehn, Veronica Sotelo Munoz, Amanda Reiter, and Kristin Wolff. 2020. *State Experiences Expanding Registered Apprenticeship: Findings from a Federal Grant Program.* Princeton, NJ: Mathematica; "What is an Apprenticeship Program Sponsor?" accessed April 19, 2023, https://www.apprenticeship.gov/help/what-apprenticeship-program-sponsor.

Note: No single model or definition of an industry intermediary exists, but frequently entities connect industry and community partners in an effort to boost each partners' ability to promote apprenticeship. Because of this, community colleges can serve as intermediaries, even though they are also related instruction providers (Sattar et al. 2020).

Six state apprenticeship agency representatives reported providing direct financial incentives to employers to offset the costs of hiring, paying, and providing on-the-job training to apprentices. Five representatives indicated that they provide incentives to other kinds of sponsors, who play a role in registering, administering, and sometimes operating apprenticeship programs. A sponsor can be any

[6] Two state representatives also indicated that they provide incentives to apprentices in the form of financial assistance, provision of computers, and other direct support. We considered this type of assistance to be different from incentives to attract employers to apprenticeship and expand the number of apprenticeship openings, and thus we excluded this from the discussion of incentives in this brief.

[7] "What is an Apprenticeship Program Sponsor?", Apprenticeship USA, accessed April 19, 2023, https://www.apprenticeship.gov/help/what-apprenticeship-program-sponsor.

employer or employer consortium, intermediary, education and training entity, community-based organization, or other entity that is responsible for an apprenticeship program.

The representatives from Arkansas and California reported a strong focus on the use of intermediaries to expand apprenticeship and said their states have targeted incentives to them. Workforce and industry intermediaries cultivate relationships between employers and other apprenticeship partners, develop program design and implementation, and help identify career pathways (Sattar et al. 2020). A variety of organizations can serve as intermediaries, including unions, nonprofit or community-based organizations, community colleges or school districts, or workforce development boards. Intermediaries can also serve as apprenticeship program sponsors.

Another approach is directing incentives directly to education and training entities. Education and training entities can include schools and school districts, community colleges, and local education agencies. Four state representatives indicated that incentives flow through education and training entities because this offsets costs to employers. In addition, the representative from California said the primary recipient of one of California's incentive grants, the California Apprenticeship Initiative funding, must be a local education agency, but they are allowed to work with whichever organization is sponsoring the program. The representative from Mississippi reported that incentives are paid directly to community colleges that provide training for sponsors. The representative from Mississippi said the funding has been used for supportive services provided by the college, to offset the cost of training apprentices, and to hire a curriculum writer for one of the community colleges.

Funding Ranges of Financial Incentives

Discussants shared the structure of their states' financial incentives, which included financial assistance based on the number of apprentices hired, tax credits based on apprenticeship expenditures, and reimbursements for RTI and other expenses incurred.[8] For subsidies based on the number of apprentices hired, the per apprentice funding ranges mentioned in our discussion groups were between $300 per apprentice in Minnesota to $15,500 per apprentice in the cyber security industry in Arkansas. Incentives can be narrowly specified and eligible only for certain industries and occupations or can be offered to any employer that hires a registered apprentice, regardless of industry. For example, Connecticut's tax credit for employers of manufacturing, plastics, and construction apprentices is calculated by the lesser of the following:

- A set dollar amount multiplied by the hours worked by the apprentice during the first half of a two-year qualified[9] apprenticeship training program or the hours worked by the apprentice during the first three-quarters of a four-year qualified apprenticeship training program; the set dollar amount is equal to $6.00 for apprentices in manufacturing, $4.00 for apprentices in plastics, and $2.00 for apprentices in construction

[8] See table A1 in the appendix for more detailed information on individual incentives.

[9] An apprenticeship program is defined as qualified if the apprenticeship period is at least 4,000 hours (two years) but not more than 8,000 hours (four years) and if the apprentice is employed on a full-time basis.

- Fifty percent of the total wages paid to the apprentice during the first half of a two-year qualified apprenticeship program, or first three-quarters of a four-year qualified apprenticeship program
- A total of $7,500 for apprentices in manufacturing, $4,800 for apprentices in plastics, or $4,000 for apprentices in construction[10]

Meanwhile, the Arkansas state representative reported that employers in Arkansas who hire registered apprentices are eligible for a tax credit of $2,000 or less per apprentice up to $10,000, or 10 percent of wages earned in a taxable year, whichever is less.

How Are Incentives Used to Achieve Goals?

Financial incentives reduce the cost of apprenticeship for sponsors, employers, and other apprenticeship stakeholders to ultimately increase the number of registered apprentices and RA programs, but providing financial incentives yields other benefits**.** State apprenticeship agency administrators discussed how incentives have helped states strengthen connections with employers, reach underrepresented populations of potential apprentices, increase the overall number of apprentices, and diversify apprenticeship industries.

The more tools you have in your tool belt, the more capable you are of responding to what businesses may need.
—State apprenticeship administrator

Attracting Employers to Apprenticeship and Increasing the Number of Apprentices

Four states indicated that financial incentives help bridge the gap between state agencies and apprenticeship program sponsors and employers of apprentices. Two representatives said that incentives help facilitate a conversation with an employer, whereas without those programs, "the door may not even be open." The Arkansas representative also mentioned that incentives help with expansion efforts, and in Florida, the Pathways to Career Opportunities grant has attracted attention to apprenticeship in the state. According to the Mississippi representative, it has been advantageous—and particularly beneficial for small businesses—to offer the grant to the employer. They advised that keeping employers involved and engaged simplifies the apprenticeship program registration process.

[10] For more information on Connecticut's tax credit, please visit "Apprenticeship Training Tax Credit in Manufacturing, Plastics, Plastics-Related, or Construction Trades," Connecticut State Department of Revenue Services, last updated February 1, 2023, https://portal.ct.gov/DRS/Publications/Corporation-Credit-Guide/Apprenticeship-Credit-01FEB2023.

By attracting new businesses to apprenticeship, states are working to increase the number of apprentices. Representatives from Arkansas, California, and Minnesota perceived that incentives have increased the number of apprentices in their states. The California administrator said they think their incentives are working. As one data point, they shared that the largest increase in new apprenticeships occurred in the past six months, and that nontraditional apprenticeships grew by 36 percent—more than ever before. Nontraditional apprenticeships are apprenticeships in industries other than the building trades (Sattar et al. 2020)

Helping Employers Reach Underrepresented Populations

Four states have incentive programs designed to reach populations traditionally underrepresented in apprenticeship. The California Youth Apprenticeship Grant, for example, is an incentive program specifically focused on drawing opportunity youth (youth ages 16 to 24 who are disconnected from school or employment) to apprenticeship programs in nontraditional industries other than the building trades (Sattar et al. 2020). Although youth between the ages of 16 to 24 make up about a third of all apprentices, opportunity youth face additional barriers to mobility, including program completion, and youth between the ages of 16 and 18 are substantially underrepresented in apprenticeship compared with other age groups (Kuehn et al. 2023).[11]

The representative from Michigan highlighted the impact of the COVID-19 pandemic on apprenticeship programs (Ruggiero and Krantz 2023), and that it negatively impacted women at a disproportionately higher rate than men. To address this problem, Michigan has several programs focused entirely on engaging women in apprenticeship, as one of their goals for apprenticeship is engaging populations typically underrepresented in RA programs. The representative from Michigan also identified individuals without high school equivalency credentials as underrepresented in apprenticeship. Maryland has financial incentives directed toward employers that hire youth, formerly incarcerated individuals, youth in foster care, and unaccompanied youth experiencing homelessness. Employers that hire women, veterans, and individuals from other underserved communities are the intended apprentices of Minnesota's incentive program.

Expanding Apprenticeship in Nontraditional Industries and Occupations

Two-thirds of apprentices nationally are registered in the building trades, where apprenticeship is well-established.[12] States are also interested in expanding apprenticeship into less traditional occupational sectors, including health care, IT, and education. Arkansas, California, and Michigan are using incentives to elevate nontraditional apprenticeships. The California administrator described how it can be difficult for new employers to tap into RTI funding because most state-funded RTI is already allocated to the incumbent building and fire RA programs. In response, California created the California Apprenticeship

[11] Across the 42 states and programs reporting apprenticeship data to the federal government in 2021, only 16,831 apprentices were between the ages of 16 and 18 at the time of their registration, compared with the 98,955 who were between 19 and 21 and the 98,112 who were between 22 and 24 at the time of their registration (Kuehn et al. 2023).

[12] Authors' calculations from active apprentices outside the U.S. military in RAPIDS for calendar year 2022.

Innovation Funding incentive for nontraditional industries.[13] The Apprenticeship Innovation Funding includes a training component that is reimbursed at the same rate as traditional occupations.[14]

Michigan is also using incentives to expand into nontraditional occupations. They have a program that focuses on health care, IT, business, and other nontraditional occupations. In addition, the representative from Arkansas mentioned that the Arkansas Office of Skills Development recently awarded $2 million to the Advanced Energy Association to expand apprenticeships in the energy industry and have previously partnered with the Arkansas Center for Data Science to develop apprenticeships in the IT sector.

Using Intermediaries to Support Expansion

Two state representatives indicated they are targeting incentives to intermediaries to support apprenticeship goals and commented on the benefits of the intermediary approach. California is in the process of building incentive programs for intermediaries, which operate and register apprenticeship programs with the Division of Apprenticeship Standards and DOL. In California, intermediaries inform program design, recruit apprentices, communicate and coordinate the needs of multiple employers and sometimes sponsor apprenticeship programs. As the state has expanded into nontraditional industries such as health care, IT, education, and professional services, they have found that developing incentives for apprenticeship intermediaries is beneficial. Arkansas expressed a similar sentiment. The representative shared that investing in intermediaries in IT led to an increase in apprenticeship programs in IT, because it broke down the barrier to entry for both individuals and employers. The representative indicated that they have experienced substantial engagement (over 100 companies registered) through their IT industry intermediary, the Arkansas Center for Data Sciences. One state representative also reported that intermediaries need to be heavily funded to provide support for small businesses where there is the greatest opportunity for apprenticeship growth.

What we're trying to incent is the registration of [apprentices] that would not have been registered otherwise.

—State apprenticeship administrator

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[13] In California, nontraditional industries are defined as any apprenticeship program not in the building or fire trades. Although the fire trade is a nontraditional apprenticeship industry nationwide, California has a strong focus on the fire trades likely because of the firefighter shortage and the ongoing threat of wildfires in the state.
Sophie Quinton, "Lack of Federal Firefighters Hurts California Wildfire Response." *Stateline* (blog), The Pew Charitable Trusts, July 14, 2021, https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2021/07/14/lack-of-federal-firefighters-hurts-california-wildfire-response.

[14] See table A1 in the appendix for more detailed information on individual incentives.

Directing Incentives to Sponsors

The Maryland representative reported on some administrative benefits to directing incentives to sponsors, even if those sponsors were not always the apprentice's employer. They noted that sponsors tend to be larger and more established entities than individual employer partners. Although state apprenticeship staff in Maryland have some level of regular contact with the employers participating in a group program, they do have very strong connections with program sponsors. Overall, they indicated that directly funding sponsors can be a mechanism to increase apprenticeship registration.

In Arkansas, funding sponsors allows the state to clearly articulate certain data points, including the number of apprentices, the number of instructors, and the cost per hour of instruction. However, the representative from Arkansas also noted some challenges to funding sponsors, including some employers' occasional lack of awareness of incentive programs because the funds flow directly to larger program sponsors. The representative also mentioned that past sponsors have not always used incentives as intended. They indicated that they have addressed the lack of accountability for the direction of funding and emphasized that they are now in a much better place (regarding funding accountability) than they were 24 months ago. The representative from Arkansas also described that one of the reasons they funded sponsors was to keep apprentices' tuition expenses at a minimum.

What Are the Challenges of Administering Financial Incentives?

In the discussion groups, state apprenticeship agency administrators outlined challenges they have encountered in administering and implementing financial incentives. The discussants described challenges with engaging certain types of employers, the lack of awareness of incentives, advertising incentives, and apprenticeship incompletion as some of the complications they have observed and discussed strategies they have taken to address these challenges.

Engaging with Employers, Particularly Small Businesses

Four representatives indicated that incentives are not enough to encourage some employers to adopt apprenticeship. Five representatives described the limited capacity for small and medium-sized businesses to engage in apprenticeship as a barrier to building incentives for employers. One representative indicated that for many small businesses, the reporting requirements mandated by their state and by DOL discourage them from becoming involved in apprenticeship. Two representatives indicated that, unlike large employers with human resources and finance departments, small employers that sponsor their own programs may lack sufficient staff to handle registering apprenticeship programs. Another state representative said that the registration process and subsequent reporting requirements can be so onerous for some employers that incentives are not enough to motivate them to become involved in apprenticeship.

Not every business is created equal … a large employer's capacity to navigate through a grant application process is probably relatively better than a [small business's].
—State apprenticeship administrator

In contrast, one state representative discussed how a $1,500 incentive per apprentice may be worth more to a smaller employer than to a larger one. Even some large employers that have the capacity to register apprentices might be discouraged from applying for incentives if they do not believe the incentive offsets the costs of registering and operating a RA program. As one state representative pointed out, some employers find it easier to hire employees and train them on the job informally, rather than operate a RA program. Five representatives indicated that scaling down the reporting requirements would draw more employers toward apprenticeship and improve the take up of incentives.[15]

Lack of Awareness of Incentives

Representatives shared cases in which employers did not apply for incentives because they did not know about the available resources. Four representatives noted that this is a challenge, and two others said that they have never experienced having to turn employers away because of an excess in demand of an incentive. Although another representative described the level of awareness for available subsidies in their state as "growing," they told us that the level of awareness "does not yet meet the state's need for stakeholder benefits from the use of the training model".

States shared some advertising strategies but emphasized that gaps in awareness remain, despite their marketing efforts. The Maryland representative said that continuous advertisement is important to get the word out about incentives, coupled with being available to provide applicants with technical assistance upon request, to including providing instructional training on how to apply for grants each year. Four states email incentive opportunities to their sponsor contact lists or distribute information through their listservs. Other strategies for outreach mentioned by the states' representatives included marketing on the agency website, informational videos, social media, and press releases. In Michigan, marketing is carried out regionally by apprenticeship success coordinators in each of the state's 16 workforce regions. The apprenticeship success coordinators adjust the marketing to fit the needs of the workforce regions and were viewed as instrumental in expanding awareness of the state's reimbursements. California's outreach efforts include an educational campaign about financial incentives. They host virtual and in-person workshops to advertise the incentives to as broad an audience as they can, and present how to navigate and access financial incentives at events.

[15] A future brief in this series will discuss the data and reporting infrastructure of state apprenticeship systems.

Securing Funding to Support Marketing of Incentives

The cost of marketing was another challenge related to the awareness of incentives. The Arkansas representative noted that marketing incentives and apprenticeship is costly, but the marketing budget is slim. They said that the "Why Apprenticeship" informational video series they created was expensive and continuing to produce these videos would require more of the operating budget for marketing than is currently available.

Maryland shared how they could receive additional funding for marketing and used the State Apprenticeship Expansion 2020 Grant from DOL to fund a comprehensive statewide marketing plan.

The Limitations of Upfront Funding in Addressing Apprenticeship Completion Challenges

Maryland and Minnesota are also using incentives to target the registration of new apprentices. Minnesota keeps a list of Registered Apprentices and their respective programs, and they do not allow employers to use incentives to fund apprentices that transfer from one program to another. Maryland's incentive grants are also designed for apprentices in the first year of their program. By targeting first-year apprentices, state apprenticeship agencies indicate that they can expand access to apprenticeship and increase the total number of apprentices in their states.

Incentives were primarily targeted at realizing goals around apprenticeship expansion; however, three states expressed a concern that upfront, one-time funding does not help with the problem of apprentices dropping out of multiyear programs. One state representative said that 30 to 50 percent of apprentices do not complete their programs. The group discussed the difficulty of the first year of apprenticeship and noted that more apprentices drop out in the first year of a program than in the succeeding years.

Apprenticeship is open to everybody, but it's not for everybody.
—State apprenticeship administrator

State apprenticeship agency representatives also discussed the role of incentives in sustaining apprenticeship programs, and noted that often, the way incentives are structured do not address this issue. One state representative noted that that they are starting a lot of apprenticeship programs, but the completion rate is not climbing at the same rate. They noted an issue with short grant periods that focus on registration of apprentices, which might not incentivize implementation of strategies that support longer retention. One state representative reported discovering incidences where employers were not as selective about who they enrolled in their apprenticeship programs because the costs were

covered by incentives. One discussant mentioned that the apprenticeship completion problem is more prevalent in the building trades because nontraditional apprenticeship programs tend to be shorter. For example, the average program length for technology apprenticeships is a year, and the completion rate tends to be much higher than the completion rate in the traditional occupations.

To address the challenge of apprenticeship completion, some states are designing incentives to focus more on outcomes, such as completion. The Michigan representative described how they are in the process of repositioning state funds to focus more on completion. They would prefer some of the incentive funding be paid out at the end of the apprenticeship, not the beginning, so that employers are driven to support their apprentices through completion of the program. Similarly, the representative from Arkansas indicated that they changed their licensed practical nurse apprenticeship model to provide 50 percent upfront and 50 percent upon completion. They reported that by tying in completion and progression, employers became more selective about who they let into their programs, which increased their outcomes and the state's subsequent return on investment. In California, some incentives are built specifically to target the apprenticeship incompletion problem. For example, the representative from California said that California's Apprenticeship Innovation Funding has a $1,000 completion bonus in addition to the $3,500 per apprentice they are already offering. California's DOL State Apprenticeship Expansion, Equity, and Innovation subaward is also built to fund programs 25 percent upfront (to be used for start-up costs), and 75 percent upon a recipient's 90-day retention of an apprentice.

Takeaways

The state apprenticeship administrators that participated in the discussion groups indicated that financial incentives, including tax credits and subsidies, can help offset the costs of operating a RA program for employers. The state apprenticeship administrators reported on the benefits of incentives, which include fostering collaboration between states and recipients, increasing the number of apprentices, attracting underrepresented populations to apprenticeship, and expanding apprenticeship into nontraditional industries and occupations. Two states are targeting incentives at intermediaries as a strategy for expansion. The administrators also discussed challenges related to incentives. The administrators noted that employers often do not take advantage of incentives for a variety of reasons, which include a lack of awareness of incentives, challenges with recruiting certain types of employers, insufficient funding for marketing, and the challenges of upfront, one-time funding to target apprenticeship incompletion and ongoing costs in multiyear programs. To address challenges with apprenticeship completion or delays in starting up new apprenticeships, three states reported repositioning their funding models to allow for reimbursement upon completion of certain milestones.

Appendix

Information Collection and Limitations

We used a purposive selection strategy to choose eight states (Arkansas, California, Connecticut, Florida, Maryland, Michigan, Minnesota, and Mississippi) to include in this study. The study will result in eight briefs on different topics related to state efforts to expand apprenticeship.

We made state selections based on specific criteria related to the topics of interest for the broader study to ensure the collection of information on experiences and characteristics related to those topics. Additionally, we wanted to ensure the selected states had a range of state apprenticeship system characteristics. Criteria included the following:

- had at least one identified financial incentive
- diversity in the characteristics of the apprentices
- at least one identified strategy for recruiting employers
- > 40 percent apprentices in non-building trades
- had a data infrastructure system
- presence of rural or opioid apprenticeship strategy
- received at least two federal grants for apprenticeship expansion

Data sources used to examine the above criteria included RAPIDS data, a 2021 report from the National Conference of State Legislatures, and a 2022 report by Mathematica and the Urban Institute that examined the capacity of state apprenticeship systems.[16] Twenty-six states met the criteria above and from there, eight states were selected based on diversity by region, having a mix of states that register apprenticeships through the DOL Office of Apprenticeship (OA states) or through State Apprenticeship Agencies (SAA states), the number of active apprentices in the state, and overall variation across the topics where the states had relevant activity.

Authors conducted two 90-minute virtual focus groups, referred to as discussion groups in this brief, with eight total high-level apprenticeship administrator staff to learn about their experiences with financial incentives.[17] Each discussion included four states. Focus groups used a semistructured

[16] See Jacquinot, Landon. January 2021. Incentives for Apprenticeships. Denver, CO: National Conference of State Legislatures. https://www.ncsl.org/research/labor-and-employment/incentives-for-apprenticeships.aspx.

See Harrington, Alicia, Ryan Ruggiero, Samina Sattar, and Lauren Eyster. May 2022. Understanding the Capacity of State Apprenticeship Systems. Washington, DC: Urban Institute and Princeton, NJ: Mathematica. https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2023_03_Understanding_the_Capacity_of_State_Apprenticeship_Systems.pdf.

[17] One staff from each of the following agencies was included in our discussion groups: Arkansas Department of Commerce, Office of Skills Development; California Department of Industrial Relations, Division of Apprenticeship Standards; Connecticut Department of Labor, Office of Apprenticeship; Florida Department of Education; Maryland Department of

protocol and authors conducted them in December 2022 and January 2023. The authors conducted applied thematic analysis using qualitative data from the discussions, coding the text to align with the research questions to identify themes and multiple perspectives. However, there are a few limitations to this approach. The study reflects the experiences of eight states and should not be considered representative of all states' experiences. Additionally, because of time constraints and the nature of the discussions, all states did not contribute to every question, and at times, different topics were discussed across groups. Therefore, counts of state responses only refer to how many states provided information during the discussion. In certain instances, states may have had similar experiences that they did not mention in the discussion, and therefore may not be included in counts.

Labor, Apprenticeship and Training Program; Michigan Department of Labor and Economic Opportunity; Minnesota Department of Labor and Industry; and Mississippi Department of Employment Security, Office of Apprenticeship.

TABLE A-1

Structure of State Financial Incentives for Registered Apprenticeship Programs[18]

Arkansas

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Construction Industry Crafts Training Trust Fund	Sponsor	Reimbursement	Arkansas Office of Skills Development	Generated from a surcharge in $0.50 per $1,000 of construction authorized on any non-residential construction permit to support apprenticeship training in the construction trade and supports instructors, curricula, and equipment costs. Typically, this amounts to $888,000 per year. Funds are awarded up to $20,000 per program per year.
Skills Development Fund[a]	Intermediary	Reimbursement	Arkansas Office of Skills Development	Dependent on the training program. In the past, they have funded as much as $4,000 per apprentice for RN and LPN apprenticeship programs and as much as $15,500 per apprentice for cyber security apprenticeship programs.
Program Improvement Funds	Sponsor who is providing the related technical instruction to pay for the instructor	Reimbursement	Arkansas Office of Skills Development	Reimburses instructors or sponsors for actual expenses incurred at up to $40 per contact hour. If funds remain at the end of the year, program sponsors can receive up to 15 percent for administrative expenses.
Apprenticeship Tax Credit	Employer	Tax credit	Arkansas Department of Finance Administration	$2,000 per apprentice up to $10,000 per year per company, or 10 percent of taxable wages in a year, whichever is less.

[18] This table may not be exhaustive of all the financial incentives offered to sponsors, employers, and other apprenticeship stakeholders in each of the states in this study. Citations are provided where available. Other information was obtained directly from respondents and could not be verified online.

TABLE A-1 (CONT'D)

California

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
State Apprenticeship Expansion, Equity, and Innovation Grant Subaward	Six subgrantees (workforce development boards and sponsors)	Grant/ Reimbursement	US Department of Labor and Division of Apprenticeship Standards	$4,800 per apprentice. Received $10 million grant and deployed $7.3 million. Grant recipients receive a reimbursement of 25 percent of the award for start-up costs and receive the remaining 75 percent after 90-day retention of employment and registration.
California Apprenticeship Initiative Funding	Local education agency	Grant	California Community College Chancellor's Office	At least one apprentice is registered for every $15,000 awarded or one pre-apprentice for every $2,500 awarded.
California Youth Apprenticeship Grant Program	NA	Grant	California Division of Apprenticeship Standards	TBD (budget was $20M in FY22-23). The California Department of Industrial Relations Division of Apprenticeship Standards is currently creating the Solicitation for Proposals for this grant program.
Employment Training Panel	Employer	Reimbursement	Tax on California employers	$23 million total and is used for training costs not covered by related technical instruction.
Apprenticeship Innovation Funding	Sponsor	Formula funding	California Division of Apprenticeship Standards	Support funding: $3,500 per apprentice per year and $1,000 completion bonus Training funding: $8.82 per training hour.
California Apprenticeship Council Training Funds	Build Trades Division of Apprenticeship Standards Registered Apprenticeship Programs	Formula Funding	California Division of Apprenticeship Standards	Dependent on contributions

TABLE A-1 (CONT'D)

Connecticut

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Tax credit for manufacturing trades apprentices	Employer	Tax credit	Connecticut Department of Revenue Services	$6 per hour multiplied by the total number of (1) hours worked by the apprentice during the first half of a two-year qualified apprenticeship training program, or (2) hours worked by the apprentice during the first three-quarters of a four-year qualified apprenticeship training program; 50 percent of the total wages paid to the apprentice during (1) the first half of a two-year qualified apprenticeship training program, or (2) the first three-quarters of a four-year qualified apprenticeship training program; or $7,500, whichever is less.
Tax credit for plastics and plastics-related trades apprentices	Employer	Tax credit	Connecticut Department of Revenue Services	$4 per hour multiplied by the total number of (1) hours worked by the apprentice during the first half of a two-year qualified apprenticeship training program, or (2) hours worked by the apprentice during the first three-quarters of a four-year qualified apprenticeship training program; 50 percent of the total wages paid to the apprentice during (1) the first half of a two-year qualified apprenticeship training program, or (2) the first three-quarters of a four-year qualified apprenticeship training program; or $4,800, whichever is less.
Tax credit for construction trades apprentices	Employer	Tax credit	Connecticut Department of Revenue Services	$2 per hour multiplied by the total number of hours completed by the apprentice during the first four years of a qualified apprenticeship training program; 50 percent of the total wages paid to the apprentice during the first four years of a qualified apprenticeship training program; or $4,000, whichever is less.

TABLE A-1 (CONT'D)

Florida

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Pathways to Career Opportunities Grant	Sponsor	Grant	Florida Department of Education	In 2022–23: $15 million total, $5 million for Space Coast programs only.

Maryland

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Registered Apprenticeship for Formerly Incarcerated Individuals Pilot Program–Maryland Apprenticeship and Training Program (MATP)	Sponsor or employer	Grant	Maryland Department of Labor	$1,000 per new eligible Registered Apprentice. Sponsors or employers can receive up to $25,000 per year.
Law Enforcement Cadet Apprenticeship Program–Maryland Apprenticeship and Training Program (MATP)	Employer (law enforcement agency)	Grant	Maryland Department of Labor	Up to $2,000 per apprentice, depending on the number of apprentices. For an eligible university law enforcement agency, up to $1,000 per apprentice.
Maryland's Fostering Employment Program–Maryland Apprenticeship and Training Program (MATP)	Sponsors or organizations offering pre-apprenticeship programs	Reimbursement	Maryland Department of Labor	For apprentices, sponsors can be reimbursed for up to $7,500 per apprentice for up to four years. For pre-apprentices, sponsors can be reimbursed for up to $3,500 per apprentice, per year.
Apprenticeship Innovation Fund (SAE Grant Subaward)	Sponsors, employers, community-based or nonprofit organizations	Grant	U.S. Department of Labor; Maryland Department of Labor	Awards up to $250,000 to 7 entities to develop registered apprenticeship programs

TABLE A-1 (CONT'D)

Maryland

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Related Instruction Reimbursement Fund (SAE Grant Subaward)	Employer	Reimbursement	U.S. Department of Labor; Maryland Department of Labor	Up to $3,000 per apprentice for the first year's related instruction cost. Total budget in FY2022 was $669,226.39 and was fully expended as of November 2022.
Sponsor Apprenticeship Incentive Reimbursement Program[b] (SAE Grant Subaward)	Sponsor	Reimbursement	U.S. Department of Labor; Maryland Department of Labor	Sponsors apply on behalf of employers that hire newly registered first-time apprentices up to $2,500 to offset related instruction or wage costs. Total budget in FY2022 was $3,486,364.
Maryland Business Works[c]	Employer	Reimbursement	Maryland Department of Labor	Incumbent worker training fund—any employee working for six months or more can apply for 50 percent reimbursement for training costs that the employer may incur for upskilling. There is a $4,500 training cap funding level for a specific trainee. Eligible businesses cannot receive more than $40,000 per calendar year.
Registered Apprenticeship Tax Credit	Employer	Tax credit	Maryland Department of Labor	$3,000 for the first five eligible apprentices (provided the apprentices work for at least seven months of that year), $1,000 for all apprentices after the first five, and $1,000 per youth apprentice. Total spent on tax offsets has historically been up to $500,000 per fiscal year.

TABLE A-1 (CONT'D)

Michigan

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Going PRO Talent Fund	Employer	Grant	Michigan Department of Labor and Economic Opportunity-Workforce Development	$3,000 per apprentice per year.
Michigan Construction Apprenticeship Post-Military Opportunity! (miCAMO!)	Service coordinator	Grant	Michigan Department of Labor and Economic Opportunity-Workforce Development	$2,232 per apprentice.
Michigan Statewide Pre-Apprenticeship "Ready for Construction" (MiSPARC)	Service coordinator/ trainer/employer	Grant	Michigan Department of Labor and Economic Opportunity-Workforce Development	$12,500 per apprentice.
Michigan Laborers' International Union of North America (MiLiUNA)	Employer	Grant	Michigan Department of Labor and Economic Opportunity-Workforce Development	$10,667 per apprentice.

Minnesota

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
Registered Apprenticeship Expansion Grant	Sponsors may apply for related technical instruction and support services funding. Employers of registered apprentices may apply for on-the-job learning funding	Grant and reimbursement	Minnesota Department of Labor and Industry	$300 reimbursement for each new apprentice. Funding is for direct support services. Apprentices must remain in their registered apprenticeship program for 90 days and receive some form of support services prior to the reimbursement. Registered apprenticeship programs receive $1,000 reimbursement for each new apprentice. Apprentices must remain in their RA program for 90 days to qualify for the reimbursement The $1,000 offsets the cost of related technical instruction or the apprentice's payroll for on-the-job learning. Each grant applicant may apply for funding based on the number of new apprentices they anticipate during the contract period. All funds are dispersed on a reimbursement basis.

TABLE A-1 (CONT'D)

Mississippi

Name of incentive program	Recipient	Type	Administering agency	Amount per program/apprentice
ASE Grant Subaward	Employer (small businesses)	Grant	U.S. Department of Labor	Up to $1,500 per apprentice for training.
SAE Grant Subaward	Community colleges	Grant	U.S. Department of Labor	$200,000 to each recipient to manage their programs for two years.

Sources: Information provided during the discussion group and follow-up information with participating apprenticeship administrators; Training requirements, ACA § 6-55-107; Apprenticeship program, ACA §26-51-509; "State of California's State Apprenticeship Expansion, Equity, and Innovation Grant (SAEEI), accessed April 19, 2023, https://www.dir.ca.gov/DAS/SAEEI-Grant-Overview.pdf; "California Apprenticeship Initiative (CAI) New and Innovative Grant Program," accessed April 19, 2023, https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Workforce-and-Economic-Development/apprenticeship/ca-apprenticeship-initiative; "Employment Training Panel, accessed April 19, 2023, https://etp.ca.gov/; "California Youth Apprenticeship," accessed April 19, 2023, https://www.dir.ca.gov/das/Youth-Apprenticeship.html; "Apprenticeship Innovation Funding (AIF)," accessed April 19, 2023, https://www.dir.ca.gov/DAS/Grants/Apprenticeship-Innovation-Funding.html; "California Apprenticeship Council (CAC) Training Funds," accessed April 19, 2023, https://www.dir.ca.gov/DAS/Grants/CAC-Training-Funds.html; "Apprenticeship Training Tax Credit in Manufacturing, Plastics, Plastics-Related, or Construction Trades," accessed April 19, 2023, https://portal.ct.gov/DRS/Publications/Corporation-Credit-Guide/Apprenticeship-Credit-01FEB2023; "Pathways to Career Opportunities Grant (PCOG) Program," accessed April 19, 2023, https://www.fldoe.org/pathwaysgrant/; "Registered Apprenticeship for Formerly Incarcerated Individuals Pilot Program – Maryland Apprenticeship and Training Program," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprgrantfiipp.shtml; "Law Enforcement Cadet Apprenticeship Program - Maryland Apprenticeship and Training Program (MATP)," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprgrancadets.shtml; "Maryland's Fostering Employment Program - Maryland Apprenticeship and Training Program (MATP)," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprfosteringemployment.shtml; "Sponsor Apprenticeship Incentive Reimbursement Program - Maryland Apprenticeship and Training Program (MATP)," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprgrantreimb.shtml; "2019 State Apprenticeship Expansion Grant - Maryland Apprenticeship and Training Program (MATP)," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprgrantexp.shtml; "Maryland Business Works," accessed April 29, 2023, https://www.dllr.state.md.us/employment/mbw.shtml; "Maryland Tax Credit for Eligible Apprentices - Maryland Apprenticeship and Training Program (MATP)," accessed April 19, 2023, https://www.dllr.state.md.us/employment/appr/apprtaxcreditinfo.shtml; "Going PRO Talent Fund," accessed April 19, 2023; https://www.michigan.gov/leo/bureaus-agencies/wd/programs-services/going-pro-talent-fund; "Michigan Construction Apprenticeship Post-Military Opportunity! (miCAMO!)," accessed April 19, 2023, https://www.michigan.gov/leo/news/2022/05/06/micamo-award; "Michigan Statewide Pre-Apprenticeship "Ready for Construction" (MiSPARC)," accessed April 19, 2023, https://www.michigan.gov/leo/news/2022/03/03/gov-whitmer-announces-8m-investment-to-support-construction-careers.

[a] Not exclusive to apprenticeship.

[b] Replaced a previous incentive program, the Employer Incentive Program.

[c] Not exclusive to apprenticeship.

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