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WORKFORCE DEVELOPMENT POLICY IN THE US

CONTEXT AND LANDSCAPE

Elizabeth J. Altman and Eli Schrag

ABSTRACT

This paper provides an analysis of government-supported workforce development programs in the United States and selected states as of the end of 2024. We provide an overview of the topic of workforce development, defining this to include activities and funding mechanisms that aim to increase the skills of workers and help them succeed in the labor market. We focus on policies supporting training outside the established K-12 public education system, traditional four-year college degrees, and professional degrees. We analyze U.S. federal government programs and explore programs and policy strategies in select states. We provide historical background on federal workforce development policy and describe the policy landscape as of the end of 2024. We identify a shift towards a sectoral approach to workforce development catalyzed by large, sector-specific federal investments. Next, we provide tables of select representative federal programs for three categories: target-population-focused, sectoral-focused, and place-based programs. We describe workforce development policies and strategies at the state level in Michigan, Ohio, Texas, South Carolina, California, and New York. We provide implications for employers and workers and offer workforce development policy recommendations. In the appendix, we provide extended tables of federal and state workforce development programs.

AUTHOR NOTES AND ACKNOWLEDGEMENTS

Elizabeth J. Altman is a nonresident fellow at Brookings, an associate professor of management at the Manning School of Business, University of Massachusetts Lowell, and research affiliate at the MIT Initiative on the Digital Economy. Eli Schrag is a senior research assistant with Brookings' Center on Regulation and Markets.

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1. Introduction

Economic change from automation, artificial intelligence (AI), climate change, an aging population, and shifting trade and geopolitical risks pose novel challenges for U.S. industry and labor markets. These challenges are structural; they are not caused by macroeconomic fluctuations but by a persistent misalignment of resources. For example, the U.S. lacks sufficient electricians for new clean energy jobs and does not have enough home health aides to take care of the aging population.[1] Meanwhile, continued automation and advancements in generative AI will impact where and how people work, what they do, and what skills organizations value. While these changes may eliminate some classes of jobs, they also create new ones with new skill requirements. To address some of these structural challenges, the Biden administration pursued industrial policy paired with funding and administrative efforts for workforce development. These efforts ranged from large, legislative initiatives like the CHIPS and Science Act, focused on advanced industries, to smaller, agency-led initiatives such as the Department of Health and Human Services' "HHS Health Workforce Initiative" to "support, strengthen, and grow the health workforce."[2]

As policymakers grapple with these challenges, relationships between organizations and their workforce are changing as well. Today's organizations are composed of interconnected, extended, networked structures of workers operating in "workforce ecosystems," moving beyond straightforward employer-employee relationships.[3] Employers think more strategically about how to orchestrate the appropriate mix of full- and part-time employees, long- and short-term contractors, gig workers, consultants, and technological assets to accomplish their goals.[4] Still, in many cases, standard employee-employer relationships, often characterized by longer-term and reciprocal commitments and investments in each other, remain an essential part of organizations. Managers focus on the need for workforce development including on-the-job training, rotational experiences, and reskilling within and across organizations. As workforces become more complex and encompass workers of all kinds, leaders are increasingly thinking beyond standard, somewhat static job descriptions and focusing more specifically on specifying roles that need to be filled and work that needs to be accomplished to achieve stated strategic objectives.[5] More and more, project-based, interdisciplinary, and time-bound tasks are becoming the norm. Additionally, workers move more quickly between opportunities within and among organizations such that ongoing worker development is becoming more prevalent and pressing. Yet, it is also becoming increasingly less attractive and more difficult for organizations to provide appropriate worker training.[6] As workers move more frequently, organizations become less inclined to invest in developing individual, often short-term workers. Additionally, workforce ecosystems pose specific challenges for developing a skilled workforce because there are legally defined distinctions between hired employees (i.e., W-2 employees in the U.S.) and independent contractors and the protections and benefits afforded to each. Labor laws are often misaligned with organizational reskilling needs as they affect how an organization can provide worker training. For example, the Fair Labor Standards Act (FLSA) provides guidance for whether a worker should be considered an independent contractor or employee, and this distinction then impacts the investment level an organization can make in job-specific training for that worker.[7]

With structural and organizational challenges facing the U.S. economy and businesses, policymakers—including members of Congress, state legislators, and regulators—invoke workforce development as a priority. For example, states are shoring up workforce initiatives through existing workforce institutions and new programs focused on specific sectors, while the federal government has pursued workforce development alongside industrial policy. Through these programs, organizations can use government resources to train workers or provide information to workers and encourage them to take advantage of government-funded development opportunities.

The rest of the paper is structured as follows: In section 2 we provide background and historical context for workforce development in the U.S.; in section 3 we describe federal programs and explain the impact of legislation that provides funding for workforce development as part of a larger industrial strategy; in section 4 we categorize workforce development programs; in section 5 we explore workforce development in Michigan, Ohio, Texas, South Carolina, California, and New York; in sections 6-7 we provide implications for employers and workers; in section 8 we provide considerations and recommendations for policymakers; and in section 9 we provide concluding comments.

2. Background

DEFINING WORKFORCE DEVELOPMENT

The term "workforce development" encompasses a range of services and offerings. At its broadest, it includes a large set of activities aimed at enhancing the skills and employability of workers.[8] Researchers choose their own definitions and sometimes limit them to make this unwieldy topic more manageable. For example, MIT's The Project on Workforce defines workforce development programs very specifically as: "short-term (lasting less than two years), post-high-school training opportunities in which learners gain work-relevant skills to help them find a job."[9] In this paper, we define workforce development to include activities and related funding mechanisms that increase workers' employability and skills for specific job-related activities or for longer-term career prospects. We focus primarily on services and training outside traditional K-12, four-year college degree, or professional degree settings, instead focusing on apprenticeships, internships, other on-the-job training, certificate programs, two-year vocational degrees, pre-employment training, and employment and career counseling services.

Federal workforce development programs vary on several key dimensions including funding type, funding recipient, types of skills developed, duration and intensity of training programs, type of degree or certificate conferred, population targeted, the funding/administering federal agency, and the authorizing statute. Funding type shapes how entities apply for and receive funding and which entities are eligible. For example, tax credits and formula grants entitle entities to funding for eligible workforce development activities, with tax credits typically funding or incentivizing private firms and formula grants typically funding state and local governments. The federal funding recipient may or may not provide training services themselves. For example, some federal programs fund formula grants to state or local government agencies, who then contract or provide grants to community organizations or educational institutions that deliver training services. Services provided range from brief, general career readiness and counseling to multi-year, on-the-job, full-time apprenticeship programs. To illustrate how programs vary, in Table 1 we list examples of attributes of workforce development programs across these key dimensions.

WHY DO WE NEED GOVERNMENT TO FUND WORKFORCE DEVELOPMENT?

Firms and workers base their respective workforce training investments according to the incentives they face in the labor market. Traditional theories of human capital suggest that, considering their respective incentives, workers invest in their own general skills while firms will invest in workers' firm-specific skills.[10] General skills are those that transfer easily between employers—what we commonly refer to as skills that make people more marketable. Firm-specific skills are those applicable to a specific firm or organization. While this theory makes intuitive sense, labor markets are more complicated, and both firms and workers invest varying amounts in both firm-specific and general skills.

A more nuanced theory recognizes that the balance of power between firms and workers also affects their respective incentives to invest in general skills.[11] In sum, in labor markets with high turnover, firms have less power over workers and, since workers are likely to leave, firms have a harder time capturing any returns to investing in their employees' skills. As a result, firms in this context invest less in the general skills of their workers. In contrast, in low-turnover labor markets, firms invest more in their workers, as firms can capture the return on this investment. However,

TABLE 1

Examples of attributes of workforce development programs

Funding type	Formula grant	Competitive grant	Tax credit	Competitive contract	Direct appropriation	Loan	Matching grant
Funding recipient	State govt.	Local govt.	Community org./ nonprofit	Native American tribe	Private firm	Individual	Educational institution
Skills type	Career-building	General skills	Firm-specific skills	Technical skills			
Program intensity and duration	Full-time	Part-time	Short term (hours/days/ weeks)	Medium term (1-2 years)	Long term (3+ years)		
Service offering	Apprenticeship	Pre-employment training	Internship	Degree granting	Non-degree granting	Micro-credentials	Employment counseling
Target population	Youth	Veterans	Immigrants	Homeless	Native Americans	Dislocated workers	Women
Agency	Dept. of Energy	Dept. of Labor	Dept. of Education	Dept. of Commerce	National Science Foundation (NSF)	National Institutes of Health (NIH)	Small Business Administration (SBA)
Setting	Classroom	On-the-job training	Virtual (webinar)	Hybrid			
Authorizing statute	CHIPS and Science Act	Inflation Reduction Act (IRA)	Infrastructure Investment and Jobs Act (IIJA)	Workforce Innovation and Opportunity Act (WIOA)	Perkins V		

not only must a firm choose to invest in a worker, but a worker must also expend time and effort to benefit from training. In a low-turnover environment, workers may choose not to expend effort since firm power may prevent workers from reaping the benefits of increased productivity from learning new skills.[12] For example, a firm could exploit this power to suppress wages despite the higher productivity of their employees. Following this argument, to observe high levels of firm investment in worker training there must be a balance of low turnover (which increases a firm's power) with enough worker power. This theoretical reasoning helps explain why in countries like Germany, where there is less employee turnover, firms are more likely to invest in worker training.[13] In German apprenticeship programs, workers also receive certificates for their skills. Because this certificate improves a worker's prospects in the labor market, this rebalances some power towards the worker, motivating them to invest effort in their own training.[14] In contrast, in the U.S., where there is high employee turnover and the government facilitates fewer robust apprenticeships and employer-sponsored skill certification programs, firms are less likely to perceive a benefit in investing in workforce development, and workers are less likely to take advantage of such training. Thus, in the U.S., firms often invest relatively little of their own resources in worker training.

Modern workforce ecosystems further complicate employer-sponsored training for both legal and practical reasons. Today's workforces increasingly rely on non-employees such as independent contractors. A firm may be less likely to train a non-employee contractor because a single firm may not be able to capture the value of this training; an independent contractor might have engagements with multiple firms. Additionally, certain labor laws and regulations inhibit employers from providing training to contractors.[15] As these contractor relationships become more common in higher skilled individual contributor roles and more senior management levels (e.g., data scientists, fractional C-suite executives, etc.), the impact of this conundrum increases.

With organizations less inclined or unable to invest in an increasingly important portion of their workforce, the burden of funding such training falls to individuals themselves and/or government entities at the federal, state, and local levels. However, workers may lack access to funds or credit to finance this training.[16] To fill this gap, the government can intervene to ensure workers receive adequate training. In the U.S., in addition to the public education system, workforce development programs serve this need.

HISTORY OF WORKFORCE DEVELOPMENT IN THE US

The historical background of workforce development in the U.S. provides helpful context for this study. History illuminates the underlying political forces driving various strains of workforce development policy and explains some of the administrative workforce infrastructure in place today.

The severe and traumatic unemployment of the Great Depression spanning the 1930s delivered a new era of workforce development policy focused on maintaining full employment. This began with the Wagner-Peyser Act of 1933, which established Employment Services Centers to help workers find jobs and job training and provide employers with labor market information.[17] These centers are the precursors to today's American Job Centers or "One-Stop" Centers. In the aftermath of the Depression, Employment Services Centers helped over 26 million people find work.[18] The New Deal introduced other important innovations such as the National Apprenticeship Act of 1937 (also known as the Fitzgerald Act), which governs registered apprenticeships and the National Apprentice System.[19] The 1940s brought a shift in focus toward veterans returning home from war, but policy continued to prioritize macroeconomic concerns about maintaining full employment. The Employment Act of 1946 officially committed the federal government to work towards full employment, codifying existing sentiments and efforts that began with the Wagner-Peyser Act.[20]

With the trauma of the Depression fading and new structural economic challenges emerging, the 1950s and '60s saw a shift from the existing employment-services-focused workforce development programs towards more skills-oriented approaches. Structural economic challenges from increasing automation, globalization, and technological and geopolitical competition with the Soviet Union came to the forefront of workforce development policy.[21] Out of this emerged legislation such as the Area Redevelopment Act in 1961, the Manpower Development and Training Act in 1962, the Economic Opportunity Act of 1964, and the Trade Expansion Act's Trade Adjustment Assistance program.[22] These efforts introduced the first large federal programs focused on upskilling the workforce rather than simply connecting workers to employers or brief skill training services.[23] The Manpower Development and Training Act of 1962 and Area Redevelopment Act of 1961 represent early and prominent place-based workforce development policy, focusing on spurring growth in impoverished areas of the country.[24] In some ways, the politically salient challenges in this era of workforce development mirror the challenges the U.S. faces today. Automation and globalization have re-emerged as important issues, as has geopolitical competition, this time primarily with China.

The 1970s saw a shift towards employment-focused programs away from skills-focused programs.[25] This could reflect the prevailing macroeconomic challenges of inflation and unemployment taking center stage. These challenges likely summoned political will for programs connecting workers to employers quickly rather than facilitating robust investments in human capital. This oscillation between employment-focused programs that cast a wide net and skills-focused programs addressing structural economic change is a recurring theme of workforce development policy throughout U.S. history, a theme that is reflected in workforce development programs today.

The 1970s and '80s saw the consolidation of workforce development programs and an administrative reshuffling of powers and responsibilities between state, federal, and local governments. The Comprehensive Employment and Training Act of 1973 (CETA) replaced and consolidated individual programs. CETA exemplified President Richard Nixon's vision of "New Federalism," part of which included turning over the administration and delivery of federal workforce programs to state and local governments while still maintaining federal funding.[26] CETA transformed existing federally funded and administered programs by instead delivering block grants to state and local governments. Local governments in large metropolitan areas received direct federal funding and took responsibility for administering the programs within their jurisdiction. State governments received direct federal funding to administer programs in rural areas falling outside the jurisdiction of larger local governments.[27] In the 1980s, CETA was replaced by the Job Training Partnership Act of 1982 (JTPA), which increased local control of program administration. JTPA introduced formula grants to be given to state governments and divided among subdivisions of the state.[28] This style of federalism is reflected in many workforce development programs today, with the federal government providing formula funding, state governments overseeing high-level administration and strategy, and local governments administering and implementing programs.

The following decades saw two major legislative efforts to consolidate and streamline these federal programs: the Workforce Investment Act (WIA) of 1998 and the Workforce Innovation and Opportunity Act (WIOA) of 2014. The WIA established the American Job Centers an important component of the workforce development system today. The Workforce Innovation and Opportunity Act (WIOA) was passed in 2014 and remains the most relevant statute impacting federally funded workforce development programs. It attempted to integrate and consolidate programs and emphasized industry-recognized credentials. We discuss WIOA in greater detail in the context of today's federal workforce development policy landscape.

In sum, over the last almost 100 years, the U.S. has pursued various forms of workforce development policy. This history reflects an interplay between macroeconomic challenges, structural economic challenges, and political ideologies. From the Great Depression-era focus on unemployment challenges to the upskilling approach of the 1960s and subsequent oscillation and mixing between these approaches, workforce development programs have continuously adapted to new economic and political environments. The administrative evolution of these programs, marked by shifts in federal, state, and local responsibilities, has shaped the current balance of local and federal control. In recent decades, administrations and legislatures worked to consolidate and integrate what had become a disjointed web of programs. When it comes to policy design, there remains a persistent trade-off between lower-cost, employment-focused programs addressing more workers versus more robust (and expensive) skills training that reaches fewer workers.

3. Workforce development in the US today

In recent years, workforce development policy in the U.S. has shifted towards skills training for specific sectors such as technology, physical infrastructure, green energy, and others. At the federal level, this sectoral approach aligned with a broader industrial strategy of the Biden administration to stimulate growth in specific sectors.[29] Excluding the relatively brief, idiosyncratic shock of the COVID-19 pandemic, the U.S. has experienced falling or relatively low unemployment rates since recovering from the Great Recession.[30] However, structural economic problems have emerged from technological disruptions, demographic trends, economic inequality, globalization, and climate change. Structural challenges differ from macroeconomic challenges because they require reorganizing portions of the economy rather than stimulating it or reducing frictions in labor markets. The rise of China represents one major structural challenge for the U.S. economy for both economic and geopolitical reasons. The energy transition required to avoid climate change represents another structural challenge. These hurdles have profound implications on several policy dimensions, including workforce development. Many "legacy workforce development programs" (roughly meaning those not created in the past decade) funded through the Workforce Innovation and Opportunity Act of 2014 (WIOA) focus on helping vulnerable target populations and achieving full employment, possibly reflecting macroeconomic concerns about employment that were prevalent at the time of their creation. On the other hand, in the newer wave of workforce development initiatives part of broad-based legislative programs, the federal government took a more active role in managing the economy to tackle economic problems.[31]

To this end, the Biden administration pursued industrial policy, which includes substantial workforce development components. Industrial policy encompasses a suite of policy tools such as subsidies, tax incentives, R&D support, and tariffs aimed at supporting strategically important sectors.[32] Industrial policy goes beyond simply correcting for market failures in product markets through taxes and subsidies; rather, industrial policy aims to direct the flow of capital to certain industries or sectors in which private markets have underinvested. The CHIPS and Science Act (CHIPS and Science), Inflation Reduction Act (IRA), and Infrastructure Investments and Jobs Act (IIJA) are all legislative developments that represent industrial policy and include varying degrees of workforce investment. In the following section, we begin by describing legacy workforce development programs, focusing on those included in the Workforce Investment and Opportunity Act of 2014, and then describe the newer industrial-policy-centered approach.

FEDERAL PROGRAMS: WORKFORCE INVESTMENT AND OPPORTUNITY ACT OF 2014 (WIOA)

WIOA programs focus on preparing individuals for work and improving their prospects in the labor market.[33] This legislation was formed by lawmakers with the not-so-distant memory of the painfully slow recovery from the Great Recession in the backdrop. Broadly, WIOA represented an attempt to streamline and restructure a workforce development system primarily meant to reduce frictions in the labor market and keep unemployment rates down, rather than restructure the economy or fundamentally change the workforce.

The services provided by WIOA programs reflect the goal of increasing employment opportunities rather than reorganizing the economy. The programs include job search assistance, career counseling, and short-term occupational skills training both in classroom settings and on the job. The programs also target vulnerable populations that are more likely to struggle with finding stable employment, aiming to get people into jobs as soon as possible.[34] This is also reflected in the five titles of WIOA:

- Title I promotes "workforce development activities" through an existing national network of American Job Centers (aka "One-Stop" Centers) and workforce development boards, with programs often focused on specific target populations.[35]
- Title II promotes "adult education and literacy" and is administered through the Department of Education.
- Title III integrates the employment services established in the Wagner-Peyser Act into One-Stop Centers.
- Title IV provides employment and training programs for people with disabilities, amending the Rehabilitation Act of 1973.
- Title V contains "general provisions" such as administration, funding allocations, and program evaluation.[36]

Individuals access these programs through the more than 2,000 One-Stop Centers.[37] Though WIOA requires One-Stop Centers to provide services to anyone, most programs in WIOA target particular populations including dislocated workers, youth, low-income individuals, individuals with disabilities, veterans, homeless people, migrant farm workers, and Native Americans. One-Stop Centers' emphasis on target populations more likely to struggle with employment, the wide net cast by them, and the dearth of skill- or sector-specific training programs all reflect the political goals of the time when they were introduced. The aim was to streamline the existing workforce development programs and grease the wheels of the labor market to assist vulnerable unemployed or underemployed individuals in getting back to work as soon as possible.

The five titles of WIOA largely serve to extend legacy workforce development programs while making some administrative changes to existing workforce infrastructure. For example, WIOA formalized the partnership between pre-existing One-Stop Centers and other workforce development programs such as Temporary Assistance for Needy Families (TANF) workforce programs, the Jobs for Veterans State Grant programs, and workforce programs under the Community Service and Block Grant program.[38] This formalized partnership requires One-Stop Centers to help individuals access these programs and helps to coordinate workforce development activities from disparate government programs.[39] This further integrated various existing workforce development programs into the common workforce development infrastructure.

WIOA also extends established state and local workforce efforts previously known as "workforce investment boards" and now known as "workforce development boards."[40] Similar to the previous workforce investment boards, local workforce development boards analyze the skills and employment needs of the community, engage with local employers, and select One-Stop providers and eligible training providers.[41]

The governor sits on the state board and appoints other members which must include state legislators, chief local elected officials, labor representatives, an apprenticeship representative, workforce program staff, and business representatives (who must make up a majority of the board). Likewise, local business representatives must make up a majority of local workforce development boards, which must also include labor, apprenticeship, education and training, community development, employment service, vocational rehabilitation, and government representatives.[42] Just as the governor appoints the state workforce development board members, the chief local elected official (e.g., the mayor) appoints members of the local workforce development board.

Though WIOA modified the composition of these workforce development boards, the purpose and core functions remained largely unchanged, building upon earlier approaches. WIOA increased the level of coordination between workforce boards, requiring state workforce development boards to publish a Unified State Plan to align local workforce development activities across the state.[43] Under WIOA, local workforce development boards have less flexibility, as they are required to adhere to the strategies outlined in the Unified State Plan.[44] Despite these administrative changes, the fact that WIOA was built upon the existing administrative infrastructure highlights its purpose as a modernization, reinvestment, and streamlining of legacy workforce development programs.

Looking to the future, WIOA's funding remains uncertain. Congress only authorized funding for WIOA programs through 2020, though Congress has extended most of its programs through appropriations.[45] Members of Congress have introduced bills to reauthorize WIOA for another decade. For example, A Stronger Workforce for America Act passed the House in April 2024—it remains to be seen if it can move through the Senate.[46] The soft yet persistent bipartisan support over the decades for programs like those encompassed by WIOA suggests that these programs are unlikely to fade away completely and could, under the right conditions, experience a resurgence and expansion.

FEDERAL PROGRAMS: ALIGNING WITH STRUCTURAL ECONOMIC CHANGE AND INDUSTRIAL POLICY

In contrast to legacy workforce development programs, the largest recent investments in workforce development came through the Biden-Harris administration's industrial policies, which aimed to tackle structural challenges in the economy. While acknowledging the high bar to justify such large government intervention in the economy, the Council of Economic Advisors argued that current challenges readily cleared this bar, and so the government was compelled to redirect investment between sectors of the economy.[47] For example, they argued that underinvestment in clean energy to mitigate climate change requires heavy-handed government intervention to make clean energy more attractive relative to fossil fuels. Similarly, they argued for government intervention to shore-up the U.S. semiconductor industry in order to mitigate geopolitical and national security risks.[48] These policies have led to an inherently sectoral workforce development strategy aligned with broader economic and national security goals.

Three major pieces of legislation have instantiated this approach: the CHIPS and Science Act, the Infrastructure Investments and Jobs Act (IIJA) (sometimes referred to as the Bipartisan Infrastructure Law), and the Inflation Reduction Act (IRA). The CHIPS and Science Act makes strategic investments to re-shore the semiconductor industry, mitigating supply chain and geopolitical risk for this critical industry. The IRA and IIJA invest in clean energy and infrastructure. The CHIPS and Science Act, the IIJA, and the IRA represent colossal investments of $280 billion,[49] $1.2 trillion,[50] and $500 billion,[51] respectively, with money being dispersed over five to ten years. While most of this funding incentivizes physical capital investments, each offers substantial opportunities for workforce development as well. A closer look at each piece of legislation reveals several approaches to sectoral workforce development policies.

CHIPS AND SCIENCE ACT

To understand the workforce development components in the CHIPS and Science Act, it is useful to first understand the two major components of the legislation, Division A and Division B. Division A provides subsidies for semiconductor capital projects and R&D to encourage reshoring of the semiconductor industry (the "CHIPS" part).[52] Division B provides funding for research and innovation in a range of scientific, technological, and manufacturing areas beyond semiconductor research (the "Science" part).[53] Division A programs appropriate over $50 billion, with the largest program appropriating $39 billion for semiconductor manufacturing subsidies administered by the Department of Commerce.[54] Division B authorizes almost $170 billion in spending to a diverse array of programs in science, technology, and advanced manufacturing. In contrast to Division A, Congress must appropriate the funding in Division B for it to be used.[55] While the two divisions differ in their funding mechanisms and scope, they both contain elements that emphasize developing the skilled workforce needed to achieve their objectives.

The subsidy programs within Division A require applicants to submit workforce development plans. The Department of Commerce (DOC) issued guidance encouraging applicants to assess necessary skills and the number of workers needed, set workforce development goals with specific training targets, provide industry-specific apprenticeship or classroom training, partner with education and training entities such as community colleges, and develop recruitment plans. Division A also contains a program that requires direct funding for workforce development activities, appropriating $200 million to the CHIPS for America Workforce and Education Fund.[56] This provides funding for graduate and undergraduate programs, apprenticeships, and other workforce training to advance microelectronic design, research, fabrication, and packaging capabilities.

Division B provides funding for a larger number of workforce development programs focused on a diverse set of industries in science, technology, and advanced manufacturing. For example, the Technology, Innovation, and Partnerships (TIP) program funds practical experiential learning opportunities for workers looking to break into emerging technology fields such as artificial intelligence, biotechnology, and advanced wireless.[57] The National Science Foundation (NSF), the Department of Energy (DOE), and the Department of Commerce administer most of the programs in Division B.[58] As of yet, Congress has stalled on appropriating much of this authorized funding.[59] This makes the implementation of Division B programs more uncertain (and information harder to find).[60] The fate of these programs will depend on both congressional appropriations and executive branch implementation. However, the CHIPS and Science Act represents a potentially enormous opportunity to upskill the American semiconductor workforce.

INFRASTRUCTURE INVESTMENTS AND JOBS ACT (IIJA)

The IIJA makes historic investments in the country's roads, railroads, broadband, water, electrical grid, clean energy, supply chains, and other infrastructure and was estimated to support more than 700,000 jobs per year.[61] The legislation authorizes over $1.2 trillion in funding, almost half of which goes towards new investments and programs.[62] As of the end of 2024, the Biden-Harris administration announced over $560 billion in spending across over 65,000 projects.[63] Carrying out these investments requires an adequately trained workforce, and the IIJA provides opportunities for workforce development in the infrastructure sector. Compared to the CHIPS and Science Act, the IIJA provides less direct or required workforce development funding.[64] Instead, many programs allow state and local governments to use funds for workforce development but do not require it. For example, some of the surface transportation programs allow funds to go towards registered apprenticeship and pre-apprenticeship programs.[65] The IIJA also allows state transportation departments to use these funds to engage with state and local workforce development boards to address worker shortages and skill gaps in the highway infrastructure sector.[66] However, state highway departments lack experience engaging with workforce development boards, so it is unclear if they will take advantage of this opportunity.[67] In contrast to the surface transportation programs which allow for workforce development, a small number of programs in the IIJA require workforce development activities.[68] For example, the DOE's Energy Auditor Training Grant Program provides funding for states to train individuals to conduct home energy audits.[69] However, there are only a handful of such programs providing direct funding for training programs.

Examining the legislative history sheds light on why this is the case. As Ross et al. (2023) explain, the Biden administration initially proposed the American Jobs Plan which included more explicit investments in workforce development.[70] However, this was later split into what became the IIJA and the Build Back Better Framework. The latter included the bulk of the workforce and training provisions but never passed Congress. As a result, while roughly 20% of IIJA programs mention some form of workforce development ($490 billion across 72 programs), only eight require at least some portion of funds to be spent on workforce development.[71] Thus, the likely impact of IIJA on workforce development will largely depend on choices made by federal, state, and local implementers to use infrastructure funding explicitly for allowable workforce development purposes.[72]

INFLATION REDUCTION ACT (IRA)

The climate investment portion of the IRA also promotes workforce development. The $400 billion investment from the IRA includes grants, loan guarantees, and tax credits incentivizing clean energy and climate change mitigation and adaptation.[73] The largest investments in the IRA go towards batteries and renewables, clean electricity, carbon capture, nuclear, clean transportation, energy efficiency, and clean hydrogen.[74] As opposed to the CHIPS and Science Act or IIJA, the IRA primarily relies on tax credits. The IRA provides about $216 billion in corporate tax credits and about $43 billion in consumer tax credits.[75] The most impactful workforce development components of the IRA are tied to the corporate tax credits.

The corporate tax credits in the IRA provide strong incentives for recipients to invest in apprenticeship training programs for their workers. These apprenticeships allow participants to earn a wage while they learn and directly apply what they have learned in the classroom on the job. Apprenticeships also improve the industry relevance of workers' skills and provide an educational model that leads to quality jobs for those not well-suited for four-year college degrees.[76] Historically, the U.S. invested little in apprenticeship programs relative to higher education, making apprenticeships less common in the U.S. compared to many other developed countries.[77] However, the Biden-Harris administration made expanding the registered apprenticeship program a major workforce development goal, dramatically increasing federal funds available for apprenticeship programs.[78] Employers register their apprenticeship program either with the Department of Labor or a state apprenticeship agency and must meet certain requirements such as an occupational focus, training and mentorship, and awarding industry-recognized credentials.[79] The DOL's Office of Apprenticeship also offers technical assistance to help employers design and implement their programs.[80] The IRA builds on the administration's effort to expand apprenticeships by providing incentives for private sector firms to implement registered apprenticeship programs and utilize apprentice labor. For many of the corporate tax credits in the IRA, the total credit amount is multiplied by five if companies pay prevailing wages and incorporate registered apprenticeships into their projects.[81] To qualify for the expanded credits, the law requires a minimum proportion of labor on IRA-qualified projects to come from registered apprenticeship programs (12.5% of labor hours in 2023 and 15% in subsequent years).[82] The IRA tax credits, combined with renewed efforts to expand registered apprenticeships, mark a significant shift in federal workforce development policy toward sector-based approaches.

In addition to tax credits, the IRA contains a handful of grant programs that allow funds for workforce development. For example, the IRA funds a program that provides training for residential energy contractors.[83] Through formula grants, the program provides $200 million to states to train, test, and certify residential energy efficiency and electrification contractors.[84] However, this is the only grant program in the IRA that requires funding to be spent on workforce development training. While IRA contains less grant funding for workforce development than the CHIPS and Science Act or IIJA, the tax credits could provide significant incentives for apprenticeship programs to take hold in the rapidly growing clean energy industry.[85]

4. Program categorization: Target-population, sectoral, and place-based

To help employers, workers, policymakers, and researchers navigate the large number of federally funded workforce development programs, we've categorized programs into three main types: target-population-focused, sector-focused, and place-based programs. Through our research, we identified 162 federal workforce development programs, though this figure is not exhaustive. While our categorization aims to help employers, workers, policymakers, and others digest the vast array of programs, there is some overlap between the categories. For example, some programs are both sectoral and place-based, like the IRA's Clean Hydrogen Hubs which target jobs and job training to both specific places and to a specific industry (the clean hydrogen industry).[86] In addition to this categorization, programs can also be identified by funding type, funding recipient, skills type, program intensity and duration, service offerings, population targeted (if any), funding or administering agency, setting of training, and funding legislation. We present these attributes in Section 2 in Table 1 with examples of each. In the following paragraphs, we describe the target-population, sectoral, and place-based categories and provide tables with example programs for each.

TARGET-POPULATION

Target-population policies address the needs of specific groups of people and are particularly relevant to policymakers. By taking inventory of these programs, policymakers can better understand which populations currently benefit from available funding and which may be overlooked and underserved. Many of these programs emphasize general employability and employment procurement skills. This may include basic literacy and numeracy, computer usage, resume writing, or interviewing skills. In other target-population programs, an individual may learn occupation-specific skills, such as computer coding. These programs correspond more closely with workforce development programs associated with WIOA. In Table 2 we list several examples of target-population programs.

SECTORAL

Sectoral programs target specific sectors of the economy, often tied to industrial policy efforts. These policies reflect concerns over skill gaps resulting from tight labor markets and structural challenges such as demographic changes, globalization, automation, geopolitical competition, and the green energy transition. Employers may be particularly interested in sectoral programs, as these programs often provide funding directly to employers or allow for strong employer participation in directing training. As we noted earlier, in workforce ecosystems where a large percentage of workers may be independent contractors or contingent in other ways, training provided through government funding may be particularly valuable. Employers often access these programs through competitive grants or tax credit programs. We provide a list of such programs in Table 3.

PLACE-BASED

Place-based workforce development policies focus on the economic development of particular geographic regions. At the federal level, these policies often include sectoral components as well since they are often tied to larger regional or community economic development projects. These policies frequently focus on economically distressed areas. Long underemphasized, federal place-based workforce programs have experienced a resurgence through the CHIPS and Science Act, IRA, and IIJA.[87] Table 4 provides examples of federal place-based workforce development programs.

TABLE 2

Target-population programs: Selected representative examples

Name of program	Dept. or agency	Target population(s)	Funding type	Access and funding	Description of training and services provided
Job Corps	Department of Labor (DOL)	Low-income youth and young adults aged 16-24	Competitive contract	Individuals access the program by applying online or visiting a One-Stop Center. DOL awards contracts to Jobs Corps providers on a competitive basis.	Jobs Corps is a nationwide residential job training program that provides free housing, basic healthcare, meals, living allowance, and education. Participants can earn a high school degree or college credit and specialize in one of ten high-growth industries.
Homeless Veterans' Reintegration Project	DOL	Homeless veterans	Competitive grant	Individuals access the program through service providers. DOL awards grants to providers on a competitive basis to state and local workforce development boards, local public agencies, for-profit/commercial entities, and non-profit organizations.	The Homeless Veterans Reintegration Project provides grants to organizations helping homeless veterans with career exploration, training, job placement, and other supportive services to help individuals obtain stable employment.
Native Employment Works (NEW)	Department of Health and Human Services (HHS)	Native Americans	Formula grant	Individuals access the program through one of 78 Native American tribes or Alaskan Native organizations that receive formula-based funding through HHS's Administration for Children and Families.	NEW services include support for GED, remedial, post-secondary, or vocational education; job readiness and occupation-specific training; and employment services including job search and job placement.
Refugee Career Pathways	HHS	Refugees who are non-U.S. citizens with work authorization	Competitive grant	Individuals access the program through grant recipient who are awarded funding via competitive grants over a three-year project window. Grant recipients include nonprofits, NGOs, universities, or public agencies.	Services provided include career counseling, vocational English language training, educational opportunities, apprenticeship opportunities, child care, and transportation.

Name of program	Dept. or agency	Target population(s)	Funding type	Access and funding	Description of training and services provided
WIOA Dislocated Worker Program	DOL	Dislocated workers	Formula grant	Individuals can access this program through One-Stop Centers. The program provides formula grants to state workforce development agencies who then pass on funds to local workforce development boards. Local workforce development boards pass funding onto training service providers.	This program helps individuals who have been laid off or lost their jobs due to economic disruption find a new job as soon as possible. Possible services provided include employment/job-search services, occupation-specific skills training, on-the-job training/apprenticeship, pre-apprenticeship training, and other skills training.
Temporary Assistance for Needy Families (TANF)	HHS	Low-income	Formula grant	Individuals can access TANF workforce development services through their One-Stop Center or the local agency administering TANF services.	While TANF is most known for providing cash assistance to low-income families, the program also aims to promote job preparedness. Workforce training through TANF varies depending on the state. Services may include employment/job-search assistance or stipends for post-secondary education.

TABLE 3

Sector-focused programs: Selected representative examples

Name of program	Dept. or agency	Sector focus	Funding type	Access and funding	Description
Manufacturing Extension Partnership (MEP)	Department of Commerce (DOC)	Manufacturing	Competitive grants, private funding	Small to medium-sized manufacturers can contact their state's MEP Center to receive workforce development services. The manufacturer may pay a fee to cover part of the cost of these services.	The MEP program housed in the DOC's National Institute of Standards and Technology funds 51 MEP Centers in each state + Puerto Rico. MEP Centers provide a variety of services to manufacturers including workforce development. These services are tailored to the individual manufacturer's needs.
University Transportation Centers	Department of Transportation (DOT)	Infrastructure (transportation)	Competitive grants	The DOT funds competitive grants to consortia of higher education institutions led by one lead institution. Consortia apply for these grants through the DOT.	Funding goes towards transportation research, advanced transportation technology, and workforce development for young transportation professionals.
Broadband Equity, Access, and Deployment Program	DOC	Broadband	Formula grants, competitive grants	The formula funding goes to state governments that implement competitive grant programs.	The program helps states plan and implement broadband projects to expand into underserved areas. Though not the purpose of the program, workforce development and training for broadband jobs is an allowed use of funds.
Industrial Training and Assessment Centers (IACs)	Department of Energy (DOE)	Manufacturing	Competitive grant	The funding is a 'cooperative agreement' which is a type of competitive grant with higher levels of government collaboration. The grant program funds universities, community colleges, trade schools, and union training programs.	The program aims to increase energy efficiency in manufacturing through research and workforce development. Eligible funding uses include training energy-savvy engineers and clean energy workforce, creating new IACs at community colleges, trade schools, and union training programs.

TABLE 4

Place-based programs: Selected representative examples

Name of program	Dept. or agency	Geographic focus	Funding type	Access and funding	Description
Appalachian Regional Commission	Appalachian Regional Commission (ARC)	Appalachian region	Formula grants, competitive grants	The federal government provides formula funding to ARC. ARC then offers competitive grants to various economic and workforce development organizations within Appalachia, spanning parts of 13 states from southern New York to Northern Mississippi.	ARC is an economic development entity of the federal government and 13 state governments. ARC aims to promote economic development in the region through investments, including through various workforce development investments.
Delta Regional Authority	Delta Regional Authority (DRA)	Mississippi Delta region	Formula grants, competitive grants	The federal government provides formula funding to the DRA. The DRA then offers competitive grants to various economic and workforce development organizations within the Mississippi Delta Region, spanning parts of eight states.	The DRA aims to promote economic development by promoting infrastructure investments, health care, local leadership and capacity building, and workforce development. The DRA provides workforce development grants to a variety of organizations in economically depressed communities.
Regional Clean Hydrogen Hubs	Department of Energy (DOE)	Appalachian region, California, the Gulf Coast, Midwest, Mid-Atlantic, Pacific Northwest, and Dakotas.	Competitive grants	Eligible applicants included institutions of higher education, for-profit and non-profit organizations, state and local governments, and Tribal Nations. Funding was provided on a competitive basis.	This program invests $7 billion to create seven clean hydrogen hubs across the U.S. to accelerate commercial-scale deployment of this clean energy source. Each hub must develop a comprehensive community benefits plan with a strong emphasis on workforce development.
Regional Clean Direct Air Capture Hubs	DOE	Louisiana, South Texas, and others (to be determined).	Competitive grants	As of the end of September 2024, the DOE awarded two grants for regional direct air capture hubs. Eligible applicants include institutions of higher education, non-profit entities, for-profit entities, tribal nations, state and local governmental entities, incorporated consortia, and unincorporated consortia. Grants are awarded on a competitive basis.	The IIJA allocates funding for the establishment of regional direct air capture hubs, comprising interconnected networks of direct air capture projects, CO2 utilization partners, transport infrastructure for CO2, and subsurface and sequestration facilities in particular regions in the U.S.

5. Select state programs: Supporting regional and local priorities

Based on our research of state-funded programs in Michigan, Ohio, Texas, South Carolina, California, and New York, we recognized that the same three attributes of programs (target-population, sectoral, and place-based) also appear at the state level, and a fourth category also emerges which we call "general employer-focused" programs. These programs are like sectoral programs since they tend to provide funding to employers or organizations partnering with an employer; however, these programs do not have a specific sectoral focus. Instead, they cast a wider net, aiming to attract businesses and job creation to the state in any sector or industry. This strategy aligns with research documenting that state governments compete to attract businesses and jobs through various incentives for firms.[88] In the following sections, we describe workforce development strategies in five states, highlighting a few specific policies in each state.

MICHIGAN

Michigan has a rich industrial history centered on the growth of the automobile industry starting in the early 20th century. Companies like Ford, General Motors, and Chrysler had great influence over skills development and manufacturing advances in Michigan throughout the industry's development. Today, 13 counties in Southeast Michigan still account for 22% of the automobiles produced in the U.S., representing over $14 billion annually, and the industry still invests heavily in workforce development through industry and public partnerships.[89] Consistent with its overall strategy to grow the middle class and stimulate business and entrepreneurship in a diverse set of industries including automobiles, in March 2024 Michigan formalized its workforce strategy, releasing a statewide plan.[90] The three pillars of the plan are to:

- Increase the number of people in Michigan with a degree or skill certificate.
- Create opportunities for people to move into the middle class by eliminating barriers to employment.
- Support businesses and entrepreneurs through talent solutions.

Though the statewide plan amounts to a broader economic and education system strategy, it describes several specific sectoral, target-population, and employer-focused workforce development initiatives outside traditional K-12 and four-year college degrees.

The Michigan Reconnect and EV Jobs Academy programs contribute to Michigan's first pillar of increasing the number of individuals with degree or skill certificates. Michigan Reconnect is a scholarship program allowing students to attend local community colleges tuition-free or attend out-of-district community colleges for significantly reduced tuition.[91] The scholarship is "last-dollar," meaning it covers the remaining costs of college tuition after other scholarships, grants, or financial aid have been applied. The EV Jobs Academy program represents a collaboration between EV (electric vehicle) and auto industry firms, state and local governments, One-Stop Centers, and community colleges.[92] The program provides tuition support for EV-industry-approved associate degrees offered at community colleges throughout Michigan. The EV Jobs Academy program reflects a sectoral workforce strategy aimed at accelerating the clean energy transition while also aligning with Michigan's deep history of automobile innovation.

Michigan's Job Court program and Young Professionals program contribute to Michigan's second pillar to help move people into the middle class by removing barriers to employment. The Job Court program helps individuals convicted of low-level, non-assaultive crimes avoid prosecution and obtain employment and training. Local prosecutor's offices partner with businesses that provide employment and training for those charged with low-level, non-violent crimes. Individuals who complete the program are eligible to have their charges dropped.[93] The goal is to decrease barriers to employment for those who otherwise may have ended up with a criminal conviction. The Young Professionals program helps under-represented young people overcome barriers to employment by providing them with work experience or training leading to a certificate. Both programs aim to decrease employment barriers for vulnerable populations, analogous to many target-population programs at the federal level.

Michigan's Going PRO Talent Fund and New Jobs Training Program support the third pillar of supporting businesses and entrepreneurs. The Going PRO Talent Fund provides competitive grants to employers to fund short-term training programs to meet an employer's talent needs. The training must also lead to an industry-recognized credential.[94] Similarly, the New Jobs Training Program funds training for employers creating new jobs in Michigan; however, unlike the Going PRO Talent Fund, the training must take place at a community college.[95] Both the Going PRO Talent Fund and the New Jobs Training Program represent general employer-focused programs, as they provide flexible funding to help employers train workers without consideration for specific sectors or industries. These kinds of programs are prevalent at the state level and not as common at the federal level.

For a list of workforce development programs in Michigan, see Table A2 in the appendix.

OHIO

Like Michigan, over the past century Ohio's economy grew through the development of its manufacturing base. Ohio's economy is the 7th largest among all states, with its GDP totaling $873 billion in 2023.[96] Manufacturing output had a value of approximately $131 billion in 2023, making Ohio the fourth leading state for that measure (behind California, Texas, and Illinois). Recently, Ohio's economy has been transitioning from manufacturing to more knowledge-centric industries such as finance and insurance.[97] With these shifts comes an increasing need for workforce development to both support manufacturing and prepare workers for growing opportunities in technology and knowledge-based work.

Ohio's Office of Workforce Transformation (OWT), led by the Lt. Governor, works across various government agencies to direct and administer Ohio's state workforce development programs. Over several years, Ohio has increased spending on workforce development.[98] A 2021 report identified nearly 200 programs related to workforce development in Ohio, including federally funded programs.[99] The 2024-2025 state operating budget expanded more than 19 workforce development programs.[100] We highlight themes from these programs including a strong technology focus and industry partnerships, reflecting Ohio's historically strong manufacturing base and shifting skill demands in the modern information-centered economy.

Ohio's state-funded workforce development programs stand out for their focus on information technology. Examples include the Individual Microcredential Assistance Program (IMAP) and the TechCred program. The IMAP program reimburses individuals for approved microcredential courses in technology-related fields.[101] The microcredential programs take less than a year to complete and confer mastery in a specific skill or set of skills in a technology field. The TechCred program offers a similar service, only targeted at employers rather than individuals. Employers must submit an application identifying skill needs and plans to partner with a credential provider. They then upload proof that their employees completed the program and receive reimbursement from the state.[102] These are only two of a handful of programs related to technology workforce development in Ohio.

In addition to preparing its citizens for the modern information technology economy, Ohio also emphasizes workforce development for more traditional industries. These state programs collaborate with industries to meet workforce needs. Examples include the Industry Sector Partnerships Grant and the Auto and Advanced Mobility Workforce Strategy. The Industry Sector Partnership Grant provides funding to train workers through partnerships between private-sector firms and public or nonprofit workforce entities to train workers in a particular industry.[103] The partnership must include at least two private-sector firms within the same industry and two workforce entities, which could include, for example, community colleges, educational nonprofits, or One-Stop Centers.[104] The Auto & Advanced Mobility Workforce Strategy also leverages collaboration between government, industry, and educational institutions. The plan includes establishing a statewide sector partnership, increasing career awareness, broadening the talent pool, and scaling education and training programs to meet industry demand, with a goal of creating over 25,000 new jobs by 2030.[105] This approach parallels federal government sectoral workforce development programs; however, these programs include greater direct collaboration between industry, government, and educational institutions.

For a list of workforce development programs in Ohio, see Table A3 in the appendix.

TEXAS

The strength of the Texas economy has historically been tied to oil, gas, and agriculture. More recently, growth in sectors such as technology, aerospace, aviation, defense, biotech and life sciences, energy, IT, and creative sectors have diversified the economy.[106] As Texas is one of the fastest growing states in the country (adding more than 9 million people since 2000), its workforce development needs continue to expand in scale and scope.[107]

The Texas Workforce Commission (TWC), an agency established in 1996, oversees the state's workforce development policy, including the implementation of both federally funded programs (such as those in WIOA) and state-funded programs.[108] In developing the workforce, TWC emphasizes expanding training that leads to licensure and industry certification and building partnerships across stakeholders.[109]

Texas's apprenticeship program and Jobs & Education for Texans (JET) program aim to increase the number of individuals holding industry certificates. The TWC's Office of Apprenticeship leverages federal and state funding to expand access to apprenticeships. The office helps employers design and build apprenticeship programs; registers employer programs with the DOL; provides competitive grants using federal and state funding for intermediary entities who work with employers to set up new apprenticeship programs; and offers tax incentives for employers to set up apprenticeship programs.[110] Registered apprenticeship programs must confer industry-recognized credentials to individuals upon completion of the program. The JET program also promotes industry-recognized credentials. The program primarily serves community and technical colleges to pay for equipment necessary to start technical education courses.[111] The program also emphasizes industry-recognized credentials. The emphasis on credentials is meant to align skills with industry standards while also providing measurable outcomes for policymakers.

The Vocational Rehabilitation program and Skill Development Fund emphasize strengthening partnerships across stakeholders. The Vocational Rehabilitation Program helps those with disabilities prepare for work, providing training programs, job search, and job placement assistance.[112] The program facilitates partnerships between government, post-secondary educational institutions, and employers to promote hiring for this population.[113] Likewise, the Skill Development Fund aims to promote collaboration between community colleges and businesses in Texas.[114] The program also provides an employer engagement and community outreach team that helps to facilitate these connections.[115] It also provides funding for businesses to train new workers or current employees through coursework at community colleges. This program also reflects the general-employer model of workforce development policy that is prevalent at the state level.

For a list of workforce development programs in Texas, see Table A4 in the appendix.

SOUTH CAROLINA

Consistent with other states in the region, South Carolina's early economy centered on agriculture. In the late 19th century, leveraging the state's cotton industry and low-cost labor, the textile industry constructed mill facilities throughout the state, and with those came the need to train workers for these new jobs.[116] Global competition and offshore manufacturing in the latter part of the 20th century shifted the region's economy again as textile production receded and new industries such as automotive (e.g., BMW in Spartanburg) and aerospace (e.g., Boeing in North Charleston) took hold. Since then, South Carolina has made a concerted effort to attract new industries to the state, and workforce development is one component of this strategy.

Today, South Carolina's workforce development programs support industries including life sciences, electric vehicles, and advanced energy. Programs span multiple state agencies including the state's Department of Employment and Workforce, Department of Commerce, Technical College system, Commission on Higher Education, and other agencies.[117] To streamline and simplify this system, in 2023 South Carolina passed the Statewide Education and Workforce Development Act.[118] The law created the Office of Statewide Workforce Development within the Department of Employment and Workforce. The law also moved the Coordinating Council for Workforce Development from the Department of Commerce to the Department of Employment and Workforce. The Council oversees, monitors, and provides transparency to the State's workforce development system. Because this legislation is relatively recent, many of the consolidation and streamlining initiatives carried out by the Coordinating Council for Workforce Development will take years to complete.[119] As a result, programs in South Carolina remain a patchwork of sectoral, general-employer, and target-population-focused programs across multiple state agencies. Programs administered through the Department of Commerce and Technical College system tend to administer more employer-focused and sectoral programs, while the Department of Employment and Workforce tends to administer target-population and employment-focused programs.

Both the ReadySC and Enterprise Zone Retraining programs administered by the state's Technical College System represent sectoral workforce development programs. ReadySC is a division of South Carolina's Technical College System that supports recruitment, training, and project management for companies creating new jobs in South Carolina.[120] Unlike most programs discussed in this paper, ReadySC is not a grant or tax-credit program. Rather, ReadySC includes in-house staff who work directly with employers and local training providers to provide project managers, identify training sites and instructors, provide recruitment services, and develop customized training solutions for employers. The program focuses on eleven industries including aerospace, automotive, biotech, call centers, chemicals, distribution, food and food processing, metal, plastics, textiles, and tires. This unique program has given South Carolina an edge in attracting new investments in these industries.[121]

The Enterprise Zone Retraining program, also administered by the Technical College System, represents another sectoral workforce development policy focused on manufacturing, processing, and technology-intensive employers.[122] The credit provides a tax incentive for companies to retrain employees when introducing new technology in their facilities. The credit reimburses a company $1 for every $1.50 spent on retraining front-line employees or their direct supervisors to operate new machines or equipment. These two programs demonstrate South Carolina's particularly strong emphasis on working directly with employers to attract new jobs while also upskilling the existing workforce to meet new employer skill demands.

In addition to programs focused on particular sectors or industries, programs in South Carolina such as the Second Chance program and Back to Work program focus on decreasing barriers to employment for specific target populations. The Second Chance program serves formerly incarcerated individuals transitioning back into society. The Department of Employment and Workforce in partnership with South Carolina's Department of Corrections administers this program. They provide job-search assistance, training for interviews and resume writing, other employment-focused workshops, and advocacy on behalf of formerly incarcerated job seekers.[123] The Back to Work program, also administered by the Department of Employment and Workforce, helps those with housing insecurity, homelessness, or addiction transition into the workforce. The program includes a 40-hour, boot-camp style training program to help individuals with employment skills (job search, resume writing, etc.), financial planning, proper dress, and other soft skills necessary for stable employment.[124] The program lasts two to five weeks and provides each participant with a mentor. Notably, the administering agency (The Department of Employment and Workforce) also administers the federally funded WIOA programs. This illustrates how the "new federalist" administrative approach to federal workforce programs can provide a platform and starting point for states to launch their own programs.

For a list of workforce development programs in South Carolina, see Table A5 in the appendix.

CALIFORNIA

California ranks as both the largest state economy in the U.S. and the world's fifth-largest economy overall, surpassed only by the national economies of the United States, China, Japan, and Germany.[125] Despite having the largest population of any state, California also has among the highest government spending per capita behind only Alaska, Wyoming, and New York (as of 2021). This is in part due to California's high levels of social spending.[126] Though known for its technology sector, California has a diverse economy with workforce needs in agriculture, manufacturing, health care, and other sectors.[127] Outside of WIOA-funded programs and the associated administrative infrastructure (workforce development boards, One-Stop Centers, etc.), other state workforce initiatives are administered by California's Employment Development Department, Department of Education, Employment and Training Panel, Department of Industrial Relations, and Community College system.

The Employment and Development Department coordinates with the State's Workforce Development Board to administer both WIOA-funded programs and other state-led initiatives focusing on connecting workers to employers and training. For example, the California Training Benefits (CTB) program allows unemployed workers to maintain their unemployment insurance benefits while pursuing full-time job training, waiving the usual requirement that they must actively seek work[128] Federal law incentivizes states to allow UI recipients to pursue training instead of work, but California's program is among the most robust and flexible.[129] CTB participants can extend their UI payments up to a maximum of 52 weeks, whereas UI typically only lasts 26 weeks.[130] CTB provides a list of pre-approved training programs including those under federally funded programs like WIOA and CalWORKs (California's implementation of TANF), those under the state programs through the Employment Training Panel, employer-sponsored training, union-sponsored training, industry-association sponsored training, or training arranged by the CTB participant themself that meets certain criteria. The CTB program demonstrates how the state's relatively more expansive and permissive social welfare spending overlaps with its workforce development policy.

In addition to generous social spending, like many other states California's workforce policy focuses on helping employers train their workers. This is reflected in California's Employment Training Panel (ETP). ETP funds employer-sponsored training for front-line workers.[131] The program is mostly funded through a special tax levied on employers, though it has recently received other state funding as well. The program helps employers train both new and incumbent workers. Employers must direct the training plans but can contract the services to other training providers. An evaluation found that while the program increased revenue and employment across all participating companies, these benefits were most pronounced for established mid-sized organizations between 11 and 30 years old.[132] This suggests that the program was most helpful for companies that had some training infrastructure but needed additional resources to train and hire more workers.

In contrast to the general-employer focused ETP program and the CTB program focused on the unemployed, California's flagship High Road Training Partnership program, administered by the California Workforce Development Board, takes a sectoral approach to workforce development. The program focuses on specific sectors like healthcare, hospitality, transit, and water infrastructure.[133] The High Road Training Partnership program stands out from other sectoral and employer-focused state workforce initiatives through its emphasis on high-quality jobs.[134] The training provided varies widely, as the program funds flexible grants to training providers partnering with industry employers to meet their specific needs. The emphasis on job quality reflects California's priorities of addressing workforce needs in addition to economic inequality.

For a list of workforce development programs in California, see Table A6 in the appendix.

NEW YORK

New York's economy revolves around finance (e.g., 2024 commercial banking revenue of $246.7 billion), real estate, education, insurance, health care, and increasingly information technology.[135] Today, New York maintains an employer-focused and sectoral approach to workforce development. In May 2019, New York began a Workforce Development Initiative to invest $175 million to support businesses' skill needs.[136] The initiative funds projects in public-private partnerships to help universities meet employer needs; programs helping employers build their own workforce development pipelines; and flexible funding for workforce development projects in advanced manufacturing. Building on this investment, in 2022, New York created the Office of Strategic Workforce Development with a $350 million investment approved in the State's budget.[137]. This office now houses programs and initiatives divided across five focus areas: workforce development for people with disabilities, the educator workforce, public university students, working in the health care sector, and investment in seven target high-growth sectors.[138]

Though New York policymakers have advanced workforce development policies in recent years, Workforce Development Boards established under WIOA have not played a major role. According to an audit report by the New York State Comptroller, the state Workforce Development Board was inactive for five years between 2017 and 2022, though it was reconstituted in 2023.[139] Notably, the largest and most recent state investments in workforce development took place without the presence of an active state Workforce Development Board. This could reflect a fundamental mismatch between WIOA's employment, retention, and target-population strategy with New York's sectoral and employment-focused goals.

For a list of workforce development programs in New York, see Table A7 in the appendix.

6. Implications for employers

Providing workforce development across a heterogeneous, distributed, and interconnected workforce structure is challenging for a variety of reasons. In the U.S. especially, where labor laws prevent organizations from providing training and development to non-employee, contracted workers, organizations have significant constraints on how they can provide training and development for workers to build the skills the organization needs. Traditionally, employers focused on attracting, developing, and retaining employees who they hoped to employ for the long term. Today, organizations increasingly emphasize accessing, growing, and connecting workers through various employment relationships as they move beyond a single-minded focus on hiring full-time employees and become more sophisticated in how they orchestrate more complex, interconnected workforce ecosystems that include contingent workers. These structures encompass not only employees but also contractors and other contributors. This transition, coupled with the challenges of finding appropriate workers in a post-pandemic, skilled-labor-constrained economy, means leaders need to consider workforce development as a strategic imperative. C-suite leaders no longer consider workforce topics purely the domain of the human resources (HR) function, instead recognizing that workforce challenges and opportunities span the entire organization, including finance (with supply chain and procurement), operations, R&D, marketing, and others. For many employers, HR is evolving to include a broader remit including workforce development objectives for all or large portions of a company's workforce ecosystem.

Employers are looking beyond their own internal resources and funding mechanisms for assistance from federal, state, and local government entities. One avenue to address workforce development is for organizations to take advantage of externally funded opportunities. Public-private partnerships provide openings for private organizations to leverage external resources to improve their workforces. Many corporations partner with external organizations to aid in long-term workforce development. For example, JPMorgan Chase launched a $250 million initiative in 2013 called “New Skills at Work” aimed at developing career readiness in high-demand industries.[140] This program included JPMorgan Chase working with local, state, and national governments to address workforce needs in their regions. In 2022, they launched a $75M new initiative focused on skill-building and career readiness for young people.[141] These efforts, beyond addressing their own workforce development needs, comprise relationships that foster programs such as apprenticeships and internships.

Organizations are also starting to adjust expectations and requirements for workers, for example, by placing larger value on associate’s degrees, certificates, and alternative, non-traditional credentials. Examples include Google’s IT Support Professional Certificate,[142] Amazon Web Services certifications,[143] and project management and agile methodologies certifications such as Certified Scrum Master (CSM)[144] and Project Management Professional (PMP)[145] credentials. Federal and state programs are offering programs targeted at specific projects or linked with workforce development plans. Employers can leverage these to benefit their workforces. Additionally, dramatic increases in artificial intelligence capabilities and accessibility are impacting the availability and nature of workforce development alternatives. For example, AI is allowing organizations to produce more personalized, data-driven training along with skills assessment. As these tools continue to evolve in performance and efficiency, the shape, scale, and scope of workforce development demands will similarly evolve.

While employers used to rely in large measure on their own training programs and those from traditional educational institutions, today they have a much broader range of resources from which to draw. A litany of programs funded by legislation such as the CHIPS and Science Act, Inflation Reduction Act, and Infrastructure Investments and Jobs Act offer vast resources for companies in the semiconductor, advanced manufacturing, infrastructure, and clean energy industries. Programs that encourage workforce development as part of these larger incentive programs may provide employers more flexibility to implement training that suits their needs.

There are many resources for employers to consult to find funding opportunities for workforce development. Examples include the Grants.gov website administered by the federal government as a resource for applicants to search and apply for federal grants, many of which are for workforce development. The Department of Energy’s Office of Clean Energy Demonstrations (OCED) hosts a “Funding Opportunity Exchange,” which provides links to funding opportunity announcements.[146]

7. Implications for workers

Though many government-funded and administered workforce development programs focus on providing funding to assist employers, a good number are aimed directly at workers. For example, programs providing grants and scholarships are often available directly to individuals. As workforce development becomes less organization specific, workers can take more self-directed—even entrepreneurial—approaches to their development. Opportunities include not only traditional training programs (both in-person and online) but also apprenticeships, internships, and other on-the-job training opportunities. Programs are available, but finding them and benefiting from them is not always a straightforward process. For workers looking for training, especially those whose primary motivation is to gain employment quickly without spending more than a year in a training program, local One-Stop Centers can provide resources. Another access point is benefits.gov, especially for workers belonging to certain target populations (e.g., veterans, Native Americans, people with disabilities, etc.). This site directs individuals to a broad range of services for which they may be eligible, including workforce and training services. For workers looking for apprenticeships, a starting point is apprenticeship.gov, which contains a database of registered apprenticeship programs searchable by location. Lastly, for workers looking for longer-term (up to 2 years) vocational training, a local community college is a good place to begin this search.

Outside of traditional public workforce training options, non-traditional credentials such as certificates and firm- and industry-sponsored microcredentials (e.g., Badges like Salesforce's Trailhead program, etc.) have become increasingly popular and attractive to employers.[147] Workers need to determine which are most appropriate for their situations and seek them out. Fortunately, because firms are motivated to develop communities of potential workers, and most modern training can be delivered online, many firms now offer training at zero or low cost. For example, Applause is a firm that built a community of over 1 million people worldwide to test software. It offers its educational programming to anyone who registers, whether or not that person is completing revenue-generating work for the firm.[148] Additionally, the rise of generative AI presents substantial opportunities for innovation in low-cost workforce training delivered online. Educational organizations are already experimenting with AI tools that can personalize training. For example, Khan Academy is developing the AI tutor "Khanmigo" not only as a tutor for virtually all subjects but also as a career coach.[149] With these new technologies, it should become easier for workers to find development opportunities.

Through the CHIPS and Science Act, the IRA, and IIJA, the U.S. government allocated substantial funding to strategically critical industries—particularly green energy, semiconductors, and infrastructure—which promise high-wage jobs and significant career advancement opportunities. For example, firms in these sectors might have more training available because they have access to generous funding through federal legislation. Workers might benefit by shifting career focus to high-growth industries, especially those receiving attention from the federal government.

8. Considerations for policymakers

Since at least the 1930s, workforce development has been a constant concern for policymakers, with the primary focus shifting between returning to full employment during economic downturns and tackling specific skill shortages due to structural economic challenges. Policy in place today, at both state and federal levels, reflects both concerns. For example, some workforce policies in place today descend from New Deal policies following the Great Depression and thus emphasize matching the unemployed to jobs. However, in recent years, workforce development policy at federal and state levels focused on promoting specific sectors like semiconductors, green energy, health care, automobile manufacturing, and digital technologies. At the level of individual firms, there are forces moving the locus of worker training outside the domain of individual private firms, creating greater demand for external government funding. Given these developments, some considerations for policymakers include modernizing labor laws, directing previously authorized federal investments towards workforce development, and developing new sectoral workforce programs.

Considering the complex workforce ecosystems of modern firms which rely more heavily on non-employees, policymakers might consider reviewing labor laws that prevent employers from providing training to non-employees or contractors. Recent research shows that contractors make up an increasingly large part of our economy, often including up to 50% of the workers creating value for an organization.[150] The laws governing how organizations relate to contractors were developed at a different time, when the line between an employee and a contractor was clearer and the structure of firms' workforces simpler. Policymakers and labor law experts should explore reforming these laws to allow firms to train non-employees without compromising worker protections.

Another consideration for policymakers centers on taking full advantage of the workforce development potential arising out of industrial policy-focused legislation of recent years. For example, state and local agencies implementing the IRA, CHIPS, and IIJA legislation may overlook opportunities to allocate funding for workforce development. Additionally, to take full advantage of authorized funding, Congress could consider appropriating funding in the CHIPS and Science Act allocated for workforce development. There is great workforce development potential arising from these recent federal investments, but they require continued action on the part of policymakers at all levels of government.

To adapt to the changing structure of firms and the economy at large, policymakers should consider continuing to pursue sectoral and skills-focused training programs in addition to traditional employment-focused programs. Legacy workforce development programs, such as those associated with WIOA, tend to focus on providing workers with just enough training to obtain employment. These programs operate on the premise that once employed, workers will gain specialized skills on the job, leading to career advancement. However, in today's labor market, workers often become stuck in low paying, low-skilled jobs with little room for advancement. Well-designed sectoral workforce programs can set workers on paths to more productive and higher-wage careers. In the following section, we offer more specific policy recommendations based on the latest research.

POLICY RECOMMENDATIONS

Improving efficiency by eliminating redundancies

Congress could act to comprehensively review evidence and experience gained over the years to overhaul federal workforce development programs to address duplicate services and improve efficiency. After the initial growth of the federal workforce development system beginning in the 1930s, periodic legislative overhauls in recent decades streamlined and coordinated programs, most recently with the Workforce Innovation and Opportunity Act of 2014 (WIOA). WIOA authorized funding for programs through 2020, though these programs have continued to receive funding through appropriations. Though WIOA and its predecessor, the Workforce Investment Act of 1998, made progress toward streamlining the federal workforce system, another legislative overhaul could improve the system further.

A Government Accountability Office (GAO) report from 2019 analyzed the federal workforce system and identified significant overlap among programs that could lead to inefficiencies.[151] Disparate programs often provide similar services to similar populations. For example, all five youth programs reviewed by the GAO provide the same or very similar employment and training services to youth populations.[152] The DOL houses three out of five of these programs, allowing for some coordination of services within the department. However, coordination becomes more challenging when services are spread across multiple departments or agencies. For example, eight programs targeting Native American populations are spread across four departments (HHS, DOI, DOL, and Education). The GAO report recommends departments take steps to coordinate services by sharing information and working together. Since the report was released, departments and agencies have taken steps to coordinate services, for example by establishing interagency working groups convening key officials across multiple agencies that administer similar programs.[153] However, considering that authorization for WIOA programs expired in 2020, Congress is due for a legislative overhaul that could reduce redundancy and costly coordination efforts. Congress could prioritize consolidating programs that target both the same population groups and provide similar services.

Expanding sectoral workforce policies

A model of sectoral workforce programs represents a promising approach to workforce development. These programs provide training geared towards high-growth sectors like health care, information technology, and others. Successful policies often provide general career readiness "soft" skills; in-demand, sector-specific occupational skills that lead to a credential; job placement services; and other "wraparound services." Wraparound services might include life skills training, post-job placement follow-up to increase retention, childcare, or transportation. These programs are often run by community organizations that work closely with local employers to identify skill needs and place program participants into jobs with higher wages and better long-term career prospects.

A growing body of evidence supports the efficacy of this model of workforce development program. Based on their broad review of the evidence on workforce development programs, a bipartisan working group of scholars organized by the American Enterprise

Institute, the Brookings Institution, and the Harvard Kennedy School's Project on Workforce recommended sectoral workforce programs as a more effective approach compared to most legacy federal workforce development programs like those under WIOA.[154] While WIOA programs tend to help disadvantaged workers, these effects tend to be small and short-lived, while sectoral program results are larger and more durable. A 2022 paper reviewed high-quality randomized control trials studying the efficacy of several sectoral workforce programs.[155] The authors found that these programs substantially increased participants' earnings, primarily by placing them into higher-wage jobs with better career prospects. Depending on the program, participants' earnings increased 12 to 34% on average. The costs of the programs per participant ranged from around $5,000 to $28,000, notably higher than federal workforce development programs under WIOA, which range from about $1,500 to $2,500 per participant and tend to yield more modest and short-lived wage gains for workers.[156] The duration of the sectoral programs ranged from a couple of months to as much as two years. While these results demonstrate the programs' effectiveness at increasing individual earnings, a broader question emerges about their overall economic value.

A critical, policy-relevant question is whether the aggregate social benefits justify total program costs. A crude way to answer this question is to compare the wage gains of workers to the costs of administering the program. Katz et al. (2022) find that, in general, the wage gains outweigh the costs of administering the programs, though some questions remain regarding the longer-term wage gains (e.g., more than 5 years after completion). Wage gains must not only exceed program costs but also avoid suppressing wages for non-participating workers competing for the same or similar jobs. While difficult to verify with certainty, evidence suggests that the gains are not accrued at the expense of other workers. Crépon et al. (2013) found this to be true, so long as labor markets are sufficiently tight (high levels of job vacancies and low unemployment).[157] In tight labor markets, programs that match workers to jobs speed up the process of filling vacancies, which expands overall employment. In this situation, workers who do not participate in these programs but possess similar qualifications can readily find comparable jobs with equivalent wages. Sectoral programs specifically target high-growth sectors with tight labor markets, meaning that the benefits to program participants likely do not come at the expense of other workers.[158] Furthermore, to the extent that the programs increase skills of participants (rather than merely matching workers to higher-paying jobs), this could increase the total stock of human capital and boost overall productivity, reflecting even greater aggregate gains for society.

Because the social benefits of sectoral workforce development programs are likely to outweigh the costs and because the private sector is unlikely to produce optimal levels of training (due to market failures described in section 2), governments (state or federal) should consider funding these programs. The new wave of workforce development policy growing out of the resurgence of industrial policy is sectoral in nature. These programs focus on high-growth sectors, specifically those where government spending has stimulated growth like semiconductors, infrastructure, and clean energy. Despite this focus, they may not target disadvantaged workers or provide the holistic wraparound services provided by successful workforce development programs studied in Katz et al. (2022). Future policy should ensure that workforce development programs target high-growth sectors, include wraparound services, and target disadvantaged workers who stand to benefit most from the programs.

Expanding apprenticeships as an alternative to college

Apprenticeships offer another model of sectoral workforce development with a strong focus on on-the-job learning and mentorship. In an apprenticeship program, a participant works for an employer, receives on-the-job training from a supervisor, earns a salary, and often takes coursework related to the job.[159] Programs typically last 2-4 years.[160] In the U.S., apprenticeships are either registered or unregistered. Registered apprenticeship programs meet standards and are certified by the DOL or a DOL-approved state agency. Registered apprenticeships must include a minimum number of hours of classroom technical instruction, wages that increase over time, a sponsor to oversee the program, and lead to an industry-recognized credential.[161] Unregistered apprenticeships include training programs combining some amount of classroom instruction with wage-paying, on-the-job learning.[162] Both registered and unregistered apprenticeship programs may include or require pre-apprenticeship training, typically a few weeks to a few months of classroom instruction prior to on-the-job learning.[163] An employer, labor union, or other intermediary organization (industry association, workforce development board, community college, etc.) must oversee an individual registered apprenticeship program.[164] In 2016, around half of apprentices were trained through registered programs.[165] While registering for an apprenticeship program is typically required to receive federal funding, registration does not guarantee federal support. However, various grant programs exist to support employers and intermediaries implementing registered apprenticeships, which benefit both employers and workers.

Apprenticeships can be an attractive option for employers, workers, and the government. For employers, an apprenticeship program creates a training and recruitment pipeline that builds skills specific to the needs of the organization. While developing these skills, apprentices add value to the company through their work. Additionally, some evidence suggests that when a firm invests in training its own workforce, the firm can benefit from higher levels of innovation.[166] Indeed, survey evidence suggests that the benefits to employers of apprenticeship programs tend to outweigh the costs.[167] Apprenticeships may also contribute to less tangible benefits for firms including improved company culture and employee loyalty.[168]

For workers, apprenticeships offer an alternative route to high-paying jobs that do not require a college degree. Over the past several decades, both wages and broader levels of well-being have diverged between those with and without college degrees.[169] One explanation for this secular trend is that U.S. education has not kept pace with technological advancement.[170] Obtaining a college degree, however, may not be a suitable or cost-effective option for everyone; apprenticeships offer an alternative path for those who learn best outside a traditional classroom setting. They may also offer psychological benefits by smoothing the transition for young adults joining the workforce, providing a sense of occupational pride, and establishing a mentor-mentee relationship.[171] Crucially, evidence suggests that apprenticeships can substantially increase workers' wages and lifetime earnings.[172]

Due to benefits for employers and workers as well as the modest fiscal costs compared to college degree programs, in recent years policymakers have taken a renewed interest in apprenticeships. The DOL administers grant programs to state workforce agencies and intermediaries to help expand registered apprenticeship programs, spending over $1 billion between 2015 and 2022.[173] However, this is a modest amount compared to federal spending on higher education, with Pell Grants costing almost $32 billion in 2024 alone.[174] Federal actions to support apprenticeships in recent years include tax credits and other funding to incentivize apprenticeships as part of the Biden-Harris administration's industrial strategy, for example, the IRA tax credits described in section 3. Another legislative action includes a March 2024 spending bill which established a pay for success pilot program through the DOL.[175] This authorized the DOL to establish a program where apprenticeship intermediaries are paid based on the number of apprentices hired and trained, providing an important incentive mechanism to ensure funds are spent effectively. This represents a promising approach, yet policymakers will need to pull more levers if they want to increase employer and worker participation in apprenticeship programs.

To improve and expand registered apprenticeships, policymakers should focus on:

- Incentivizing firms and intermediaries to create new apprenticeship programs and expand existing programs.
- Make administrative investments that ease the creation of new registered apprenticeships.
- Reduce red-tape and streamline the registration process.

To incentivize the expansion of new and existing registered apprenticeships, Congress could allocate additional funding to the Department of Labor to expand grant and tax credit programs for both employers and intermediaries. To improve the efficacy of these programs, Congress could expand on the 2024 pilot program and institute a larger pay-for-success model where apprenticeship intermediaries would be compensated for each additional apprenticeship program created or each additional apprentice served.[176] This would align incentives to expand registered apprenticeships. Congress could also expand Pell grants or other higher education grant programs to cover the cost of classroom instruction for apprentices. Because firms are least inclined to pay for this portion of apprenticeship training, eliminating this cost would provide another helpful incentive.[177]

The DOL could make administrative investments such as expanding the set of occupational frameworks for registered apprenticeships.[178] These frameworks provide a blueprint for employers to build registered apprenticeship programs for a given occupation and help workers understand what to expect out of an apprenticeship program and the associated career. The DOL could institute a policy for employers that align their registered apprenticeship programs with an occupational framework to qualify for streamlined registration and expedited approval.[179] In addition to fast-tracking registration for apprenticeships that align with occupational frameworks, policymakers should consider other ways to streamline this process. One study found that about 40% of employers surveyed had trouble with the registration process.[180] The DOL could improve the registration process through technological solutions such as web-based chat features, prepopulated registration forms, and additional guidance documentation.[181]

Increasing support for apprenticeships through expanded funding, targeted incentives, and streamlined registration processes could increase both employer and worker participation in these programs. Ultimately, these enhancements benefit both firms—by ensuring a skilled, well-trained workforce—and workers—by expanding access to higher wages and stable careers.

9. Concluding comments

For organizations to succeed and drive growth in our modern economy they need strong, well-skilled workforces. The future of these workforces has never been more tied to effective, impactful workforce development. Industry and economic forces continue to increase requirements for workers to develop relevant skills and gain new experiences.

Private organizations alone cannot provide all the resources necessary to accomplish workforce development objectives. Federal, state, and local government entities need to provide and administer resources to enable relevant, forward-thinking programs to thrive. In this paper, we have introduced the topic of workforce development, provided examples of U.S. federal and state programs, presented a categorization to help sort through the myriad available programs, discussed implications for employers and workers, and provided recommendations for policymakers. We hope this overview of the U.S. workforce development landscape will allow employers to more easily find resources for their workers, individuals to more conveniently find beneficial resources and experiences, and policymakers to gain new perspectives to help in their legislative, regulatory, and administrative roles. With the increasing impact of AI, green energy, and other enabling technologies, and the continued evolution of workforce ecosystems that encompass a diverse, heterogeneous set of interconnected contributors, we expect the need for government-funded workforce development to continue to increase. We look forward to seeing how others will take this work forward and continue to improve our understanding of this interdisciplinary, dynamic, and impactful topic.

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Appendix

TABLE A1

List of federal workforce development programs

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Jobs for Veterans and State Grants	Department of Labor (DOL)	Jobs for Veterans Act	Target-population-focused
H-1B Skills Training Grants	DOL	American Competitiveness and Workforce Improvement Act of 1998	Sectoral-focused
Homeless Veterans' Reintegration Project	DOL	Various (38 U.S. Code § 2021)	Target-population-focused
Registered Apprenticeship (and associated grant programs)	DOL	National Apprenticeship Act and WIOA (originally authorized by the National Apprenticeship Act of 1937 (aka the Fitzgerald Act)	Sectoral-focused
Indian and Native American Program	DOL	Workforce Innovation and Opportunity Act (WIOA)	Target-population-focused
Job Corps	DOL	WIOA (originally authorized by Economic Opportunity Act 1964)	Target-population, sectoral-focused
National Farmworker Jobs Program	DOL	WIOA	Target-population-focused
Reentry Employment Opportunities	DOL	WIOA	Target-population-focused
Wagner-Peyser Act Employment Service	DOL	WIOA (originally authorized by the Wagner-Peyser Act of 1933)	N/A
WIOA Adult Program	DOL	WIOA	Target-population-focused
WIOA Dislocated Worker Formula Program	DOL	WIOA	Target-population-focused
WIOA National Dislocated Worker Grants	DOL	WIOA	Target-population-focused
WIOA Youth Program	DOL	WIOA	Target-population-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Women in Apprenticeship and Nontraditional Occupations	DOL	WIOA (originally authorized by the Women in Apprenticeship and Nontraditional Occupations Act)	Target-population-focused, sectoral-focused
YouthBuild	DOL	WIOA	Target-population-focused
Strengthening Community Colleges Training Grants Program	DOL	WIOA	Sectoral-focused
Trade Adjustment Assistance for Workers*	DOL	Trade Adjustment Assistance Reauthorization Act of 2015 (originally authorized by the Trade Act of 1974)	Place-based, target-population-focused
Senior Community Service Employment Program	DOL	Older Americans Act 1965	Target-population-focused
Transition Assistance Program	Department of Defense (DOD), Department of Veteran Affairs (VA), DOL	Various (10 U.S. Code § 1144)	Target-population-focused
Community Services Block Grant	Department of Health and Human Services (HHS)	Community Opportunities, Accountability, and Training and Educational Services Human Services Reauthorization Act of 1998	Place-based, target-population-focused
Career-Connected High Schools Grant Program	Department of Education (ED)	Perkins Act	Target-population-focused
Native Employment Works	HHS	Personal Responsibility and Work Opportunity Reconciliation Act of 1996	Target-population-focused
Refugee Career Pathways	HHS	Various (e.g., Refugee Act of 1980)	Target-population-focused
Refugee and Entrant Assistance State/Replacement Designee Administered Programs	HHS	Various (e.g., Refugee Act of 1980) (8 U.S. Code § 1522)	Target-population-focused
Refugee and Entrant Assistance - Voluntary Agencies Matching Grant Program	HHS	Various (e.g., Refugee Act of 1980) (8 U.S. Code § 1522)	Target-population-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Temporary Assistance for Needy Families	HHS	The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996	Target-population-focused
Job Placement and Training Program	Department of the Interior (DOI)	Indian Adult Vocational Training Act of 1956	Target-population-focused
Tribal Technical Colleges	DOI	Tribally Controlled Colleges and Universities Assistance Act of 1978	Target-population-focused
National Guard Youth Challenge Program	DOD	Defense spending	Target-population-focused
Job Training, Employment Skills Training, Apprenticeships, and Internships	DOD	Defense spending	Target-population-focused
Compensated Work Therapy	VA	38 U.S. Code § 1718 : Therapeutic and rehabilitative activities	Target-population-focused
Veteran Readiness and Employment	VA	Various (38 U.S.C. §§ 3100–3122)	Target-population-focused
Warriors to Workforce Program	VA	Various	Target-population-focused, sectoral-focused
Supplemental Nutrition Assistance Program Employment and Training	Department of Agriculture (USDA)	Various (e.g., Food and Nutrition Act of 2008) (7 U.S.C. § 2015(d)(4))	Target-population-focused
Second Chance Act Technology-Based Career Training Program for Incarcerated Adults and Juveniles	Department of Justice (DOJ)	Second Chance Act of 2007	Target-population-focused, sectoral-focused
Brownfields Job Training Grants	Environmental Protection Agency (EPA)	Superfund Act, IIJA	Target-population-focused, sectoral-focused
American Indian Vocational Rehabilitation Services	ED	WIOA, Rehabilitation Act of 1973 (29 U.S.C. 74)	Target-population-focused
State Supported Employment Services Program	ED	WIOA, Rehabilitation Act of 1973	Target-population-focused
State Vocational Rehabilitation Services Program	ED	WIOA, Rehabilitation Act of 1974	Target-population-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Career and Technical Education - Basic Grants to States	ED	Perkins Act	Place-based
Native American Career and Technical Education Program	ED	Perkins Act	Sectoral-focused
Native Hawaiian Career and Technical Education Program	ED	Perkins Act	Target-population-focused
Tribally Controlled Postsecondary Career and Technical Institutions Program	ED	Perkins Act	Target-population-focused
Manufacturing Extension Partnership	Department of Commerce (DOC)	Stevenson-Wydler Technology Innovation Act of 1980, CHIPS and Science Act	Sectoral-focused
Appalachian Regional Commission	ARC	Infrastructure Investments and Jobs Act (IIJA)	Place-based
State Digital Equity Planning Grants	DOC	IIJA	Target-population-focused
State Digital Equity Capacity Grants	DOC	IIJA	Target-population-focused
Digital Equity Competitive Grant Program	DOC	IIJA	Target-population-focused
Broadband Equity, Access, and Deployment Program	DOC	IIJA	Sectoral-focused
State and Local Cybersecurity Grant Program	Department of Homeland Security (DHS)	IIJA	Sectoral-focused
Industrial Research and Assessment Centers	Department of Energy (DOE)	IIJA	Sectoral-focused
Career Skills Training	DOE	IIJA	Sectoral-focused
Energy Auditor Training Grant Program	DOE	IIJA	Sectoral-focused
Weatherization Assistance Program	DOE	IIJA	Sectoral-focused
Battery Material Processing Grants	DOE	IIJA	Sectoral-focused
Battery Manufacturing and Recycling Grants	DOE	IIJA	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Critical Minerals Mining and Recycling Research	DOE	IIJA	Sectoral-focused
Building, Training, and Assessment Centers	DOE	IIJA	Sectoral-focused
Regional Clean Direct Air Capture Hubs	DOE	IIJA	Sectoral-focused, place-based
Regional Clean Hydrogen Hubs	DOE	IIJA	Sectoral-focused, place-based
Cost-Effective Codes Implementation for Efficiency and Resilience	DOE	IIJA	Sectoral-focused
Grants for Energy Efficiency Improvements and Renewable Energy Improvements at Public School Facilities	DOE	IIJA	Sectoral-focused
Electric Drive Vehicle Battery Recycling and Second-Life Applications Program	DOE	IIJA	Sectoral-focused
Advanced Energy Manufacturing and Recycling Grant Program	DOE	IIJA	Sectoral-focused
Clean Hydrogen Manufacturing Recycling Research, Development, and Demonstration Program	DOE	IIJA	Sectoral-focused
Clean Hydrogen Electrolysis Program	DOE	IIJA	Sectoral-focused
Clean Energy Demonstration Program on Current and Former Mine Land	DOE	IIJA	Sectoral-focused
Tribal Orphaned Well Site Plugging, Remediation, and Restoration	DOE	IIJA	Target-population-focused, sectoral-focused
Wildfire Risk Reduction and Ecosystem Restoration	DOI, USDA	IIJA	Place-based
National Highway Performance Program	Department of Transportation (DOT)	IIJA	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Surface Transportation Block Grant Program	DOT	IIJA	Sectoral-focused
Highway Safety Improvement Program	DOT	IIJA	Sectoral-focused
Congestion Mitigation and Air Quality Program	DOT	IIJA	Sectoral-focused
Local and Regional Project Assistance (RAISE) Grants	DOT	IIJA	Sectoral-focused
Consolidated Rail Infrastructure and Safety Improvement Grants	DOT	IIJA	Sectoral-focused
Nationally Significant Freight and Railroad Projects (INFRA)	DOT	IIJA	Sectoral-focused
Reconnecting Communities Pilot Program	DOT	IIJA	Sectoral-focused, place-based
Charging and Fueling Infrastructure Grants	DOT	IIJA	Sectoral-focused
Strengthening Mobility and Revolutionizing Transportation Grant Program (SMART)	DOT	IIJA	Sectoral-focused
Commercial Motor Vehicle Enforcement Training and Support	DOT	IIJA	Sectoral-focused
Active Transportation Infrastructure Investment Program	DOT	IIJA	Sectoral-focused
Maritime Administration Port Infrastructure Development Program	DOT	IIJA	Sectoral-focused, place-based
Rural Surface Transportation Grant Program	DOT	IIJA	Sectoral-focused, place-based
National Infrastructure Project Assistance	DOT	IIJA	Sectoral-focused
Natural Gas Distribution Infrastructure Safety and Modernization Grant Program	DOT	IIJA	Sectoral-focused
Bus Competitive Grants	DOT	IIJA	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Low or No Emissions Grants	DOT	IIJA	Sectoral-focused
Drinking Water State Revolving Loan Funds: Lead Service Line Replacement	Environmental Protection Agency (EPA)	IIJA	Sectoral-focused
Drinking Water State Revolving Loan Funds: Capitalization	EPA	IIJA	Sectoral-focused
Drinking Water State Revolving Loan Funds: Emerging Contaminants (PFAS)	EPA	IIJA	Sectoral-focused
Clean Water State Revolving Funds: Capitalization	EPA	IIJA	Sectoral-focused
Clean Water State Revolving Funds: Emerging Contaminants (PFAS)	EPA	IIJA	Sectoral-focused
Water Infrastructure and Workforce Investment	EPA	IIJA	Sectoral-focused
Operational Sustainability of Small Public Water Systems	EPA	IIJA	Sectoral-focused
Stormwater Control Infrastructure Project Grants	EPA	IIJA	Sectoral-focused
Clean School Bus Program	EPA	IIJA	Sectoral-focused
Joint Chiefs Landscape Restoration Partnership Program	USDA	IIJA	Sectoral-focused
National Electric Vehicle Formula Program	DOT, DOE	IIJA	Sectoral-focused
Training and Education	DOT	IIJA	Sectoral-focused
Public Transportation Technical Assistance and Workforce Development	DOT	IIJA	Sectoral-focused
State Energy Program	DOE	IIJA	Sectoral-focused
Solar Energy Research and Development	DOE	IIJA	Sectoral-focused
On-the-Job Training	DOT	IIJA	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Urbanized Area Formula Grants	DOT	IIJA	Sectoral-focused, place-based
Tribal Broadband Connectivity	DOC	IIJA	Place-based, target-population-focused, sectoral-focused
Joint Office of Energy and Transportation	DOT and DOE	IIJA	Sectoral-focused
Federal- State Partnership for Intercity Passenger Rail	DOT	IIJA	Sectoral-focused
Marine debris prevention and removal through the National Sea Grant College Program	DOC	IIJA	Sectoral-focused
Delta Regional Authority	Delta Regional Authority	IIJA	Place-based
Denali Commission	Denali Commission	IIJA	Place-based
Northern Border Regional Commission	Northern Border Regional Commission	IIJA	Place-based
Research, Investigations, Training, and Information	EPA	IIJA	Sectoral-focused
Railroad Research and Development	DOT	IIJA	Sectoral-focused
University Transportation Centers	DOT	IIJA	Sectoral-focused
Wind Energy Technology Program	DOE	IIJA	Sectoral-focused
CHIPS for America – Incentives	DOC	CHIPS and Science Act	Sectoral-focused
CHIPS for America – R&D	DOC	CHIPS and Science Act	Sectoral-focused
CHIPS for America – Workforce and Education Fund	NSF	CHIPS and Science Act	Sectoral-focused
CHIPS for America – Defense Fund and Microelectronic Commons	DOD	CHIPS and Science Act	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Increased Collaboration with Teachers and Scientists	DOE	CHIPS and Science Act	Sectoral-focused
Dr. David Satcher Cybersecurity Education Grant Program	DOC	CHIPS and Science Act	Sectoral-focused, target-population-focused
Educational Outreach and Support for Underrepresented Communities	DOC	CHIPS and Science Act	Sectoral-focused, target-population-focused
Manufacturing USA	DOC	CHIPS and Science Act	Sectoral-focused
PreK-12 STEM Education	National Science Foundation (NSF)	CHIPS and Science Act	Sectoral-focused
Undergraduate STEM Education	NSF	CHIPS and Science Act	Sectoral-focused
Graduate STEM Education	NSF	CHIPS and Science Act	Sectoral-focused
Federal Cyber Scholarship for Service Program	NSF	CHIPS and Science Act	Sectoral-focused
Microelectronics Workforce Development Activities	NSF	CHIPS and Science Act	Sectoral-focused
Incorporation of Art and Design into Certain STEM Education	NSF	CHIPS and Science Act	Sectoral-focused
Programs to Address the STEM Workforce	NSF	CHIPS and Science Act	Sectoral-focused
Robert Noyce Teacher Scholarship Program Update	NSF	CHIPS and Science Act	Sectoral-focused
NSF Eddie Bernice Johnson INCLUDES Initiative	NSF	CHIPS and Science Act	Sectoral-focused, target-population-focused
Research and Dissemination to Increase the Participation of Women and Underrepresented Minorities in STEM Fields	NSF	CHIPS and Science Act	Sectoral-focused, target-population-focused
Activities to Expand STEM Opportunities	NSF	CHIPS and Science Act	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
NSF Directorate for Technology, Innovation, and Partnerships (TIP)	NSF	CHIPS and Science Act	Sectoral-focused
Regional Innovation Engines (TIP)	NSF	CHIPS and Science Act	Sectoral-focused, place-based
Scholarships and Fellowships (TIP)	NSF	CHIPS and Science Act	Sectoral-focused
Scaling Innovations in PreK-12 STEM Education (TIP)	NSF	CHIPS and Science Act	Sectoral-focused
Rural STEM activities	NSF	CHIPS and Science Act	Place-based
Tribal Colleges and Universities	NSF	CHIPS and Science Act	Sectoral-focused, target-population-focused
Regional Technology and Innovation Hubs	DOC	CHIPS and Science Act	Sectoral-focused
RECOMPETE Pilot Program	DOC	CHIPS and Science Act	Sectoral-focused
Quantum Networking and Communications	DOE	CHIPS and Science Act	Sectoral-focused
Clean Energy Technology University Prize Competition	DOE	CHIPS and Science Act	Sectoral-focused
Small Business Voucher Program	DOE	CHIPS and Science Act	Sectoral-focused
Microelectronics Research for Energy Innovation	DOE	CHIPS and Science Act	Sectoral-focused
Science Education and Human Resources Scholarships, Fellowships, and Research and Development Projects (nuclear)	DOE	CHIPS and Science Act	Sectoral-focused
Alternative Fuel Refueling Property Credit	Department of the Treasury (Treasury)	Inflation Reduction Act (IRA)	Sectoral-focused
Renewable Electricity Production Credit	Treasury	IRA	Sectoral-focused
Clean Electricity Production Credit	Treasury	IRA	Sectoral-focused

TABLE A1 CONT.

Name of program	Administering agency	Authorizing statute or U.S. Code	Program type
Credit for Carbon Oxide Sequestration	Treasury	IRA	Sectoral-focused
Credit for Production of Clean Hydrogen	Treasury	IRA	Sectoral-focused
Clean Fuel Production Credit	Treasury	IRA	Sectoral-focused
Energy Credit	Treasury	IRA	Sectoral-focused
Clean Electricity Investment Credit	Treasury	IRA	Sectoral-focused
Qualifying Advanced Energy Project Credit	Treasury	IRA	Sectoral-focused
Energy Efficient Commercial Buildings Deduction	Treasury	IRA	Sectoral-focused
Clean Heavy-Duty Vehicle Program	EPA	IRA	Sectoral-focused
Environmental and Climate Justice Program	EPA	IRA	Sectoral-focused
Neighborhood Access and Equity Program	DOT	IRA	Sectoral-focused
Urban and Community Forestry Program	USDA	IRA	Sectoral-focused
State-Based Home Energy Efficiency Contractor Training Grants	DOE	IRA	Sectoral-focused

NOTES: This collection of government workforce development programs was compiled through keyword Google searches of public government websites (keywords like "workforce development," "employment programs," "training programs," etc...); programs still receiving funding listed in Cindy Brown, "EMPLOYMENT AND TRAINING PROGRAMS" (Washington, DC: United States Government Accountability Office, March 2019), https://www.gao.gov/assets/gao-19-200.pdf; programs from the CHIPS and Science Act listed in Martha Ross and Mark Muro, "How Federal, State, and Local Leaders Can Leverage the CHIPS and Science Act as a Landmark Workforce Opportunity," Brookings, January 4, 2024, https://www.brookings.edu/articles/how-federal-state-and-local-leaders-can-leverage-the-chips-and-science-act-as-a-landmark-workforce-opportunity/; programs from the Infrastructure Investments and Jobs Act (IIJA) listed in Martha Ross et al., "How State and Local Leaders Can Harness New Infrastructure Funding to Build a Stronger, More Inclusive Workforce," Brookings, January 19, 2023, https://www.brookings.edu/articles/how-state-and-local-leaders-can-harness-new-infrastructure-funding-to-build-a-stronger-more-inclusive-workforce/; and programs from the Inflation Reduction Act (IRA) listed in Martha Ross, "Why Workforce Development Is Crucial to New Infrastructure and Clean Energy Investments," Brookings, January 18, 2024, https://www.brookings.edu/articles/why-workforce-development-is-crucial-to-new-infrastructure-and-clean-energy-investments

*The Trade Adjustment Assistance for Workers program is terminating and no longer accepting new applicants after 2022, as the program was not renewed by Congress.

TABLE A2

Sample of state-funded workforce development programs in Michigan

Name of program	State agency	Program type	Description
New Jobs Training Program	Michigan Economic Development Corporation	General-employer-focused	The New Jobs Training program funds training for employers creating new jobs in Michigan. Training is delivered via community colleges.
Young Professionals	Michigan Department of Labor and Economic Opportunity (LEO)	Target-population-focused	The Young Professionals program helps at-risk young people overcome barriers to employment, providing them with training that leads to a certificate.
Job Court	Department of Attorney General	Target-population-focused	The Jobs Court program helps justice-involved youth avoid prosecution and obtain employment and training.
Electric Vehicle Jobs Academy	LEO	Sectoral-focused	The EV Jobs Academy program provides tuition support for students taking certain EV-industry-approved coursework at community colleges in Michigan.
Michigan Reconnect	LEO	Target-population-focused	The Michigan Reconnect program provides eligible students with a "last dollar" scholarship that allows them to attend community college in Michigan for free.
Adult Education Program	LEO	Target-population-focused	The Adult Education Program helps adults achieve high school equivalency. The program tailors instruction to meet the individual needs of adult students. Standardized tests identify existing skill levels, appropriate instruction, and academic gains due to instruction.
Going PRO Talent Fund	LEO	General-employer-focused	The Going PRO Talent Fund makes competitive grants to employers to assist in training, and developing and retaining current and newly hired employees. Training must be short-term, fill a demonstrated talent need experienced by the employer, and lead to a credential for an industry-recognized transferable skill.
HSE-To-School Program	LEO	Target-population-focused	The HSE-To-School program covers the cost of the high school equivalency exam for eligible students.

TABLE A2 CONT.

Name of program	State agency	Program type	Description
State of Michigan Internships	Michigan Civil Service Commission	Target-population-focused	The State of Michigan Internship program creates partnerships between students, academic institutions, and the State of Michigan. It provides internship opportunities across 19 different State of Michigan departments. Participants gain a competitive edge for employment opportunities with the State of Michigan.
Veterans Internship Program	Michigan Department of Transportation	Target-population-focused	The Veterans Internship program provides assistance to honorably discharged veterans to help them transition to the civilian workforce by placing them into internships. The placements depend on the veteran's skills and experiences. Placements include jobs in aeronautics, engineering, finance, maintenance, planning, project management, and administrative work. The program is funded, in part, by the Federal Highway Administration.
Michigan Career Opportunity Academy for Community Health (MiCOACH)	LEO	Sectoral-focused, target-population-focused	The MiCOACH program prepares individuals for careers as Community Health Workers through comprehensive training and mentorship. The program serves both recent high school graduates and adults who either reside in or graduated from participating school districts, facilitating their entry into the community healthcare field.
Michigan Career and Technical Institute	LEO	Target-population-focused	The Michigan Career and Technical Institute is a state-funded vocational and technical training center for adults with disabilities. Some students are eligible for free tuition as well as room and board.

NOTES: These programs were found by searching official State of Michigan websites. Links with more information and the program description source are provided for each program. The table contains programs operating primarily through state funding, though some programs combine local, state, and federal funding. Program descriptions were adapted from linked program materials or websites.

TABLE A3

Sample of state-funded workforce development programs in Ohio

Name of program	State agency	Program type	Description
Individual Microcredential Assistance Program ("IMAP")	Governor's Office of Workforce Transformation	Sectoral-focused	The IMAP program reimburses training providers for microcredentials earned by eligible program participants. Credentials offered are short-term, industry-recognized, and focused on certain high-growth sectors.
Industry Sector Partnership Grant	Governor's Office of Workforce Transformation	Sectoral-focused, place-based	This program provides matching grants for employers or consortia of employers partnering with local communities and training organizations to overcome workforce shortages.
Third Frontier and Technology College Technology Internship Program	Department of Development	Sectoral-focused	Third Frontier and Technology is a broader economic development initiative to encourage technology innovation in Ohio. Part of this initiative includes partial reimbursement of wages for technology companies that hire college students as interns.
Auto and Advance Mobility Workforce strategy	Governor's Office of Workforce Transformation	Sectoral-focused	This initiative builds an industry-informed strategy to develop Ohio's advanced manufacturing workforce. It outlines a pathway for increasing career awareness, broadening the talent pool, and establishing and scaling education and training programs. The initiative establishes industry sector partnerships that will promote other state workforce development programs.
TechCred	Governor's Office of Workforce Transformation, and others	Sectoral-focused	Ohio's TechCred program provides funding for businesses to upskill their current and potential employees through short-term, technology-focused training. It reimburses employers for training costs that result in industry-recognized credentials. All training programs under TechCred take less than a year to complete.

NOTES: These programs were found by searching official State of Ohio websites. Links with more information and the program description source are provided for each program. The table contains programs operating primarily through state funding, though some programs combine local, state, and federal funding. Program descriptions were adapted from linked program materials or websites.

TABLE A4

Sample of state-funded workforce development programs in Texas

Name of program	State agency	Program type	Description
Foster Youth Programs	Texas Workforce Commission (TWC)	Target-population-focused	This set of programs and services provides support to foster youth transitioning out of the foster care system, helping them achieve financial stability and independence.
High Demand Job Training Program	TWC	Sectoral-focused	This program funds job training programs in collaboration with local economic development entities to address the needs of industries experiencing labor shortages. The program is funded by a local sales tax and federal funding. It is implemented by local workforce development boards and Economic Development Corporations.
Jobs & Education for Texans (JET) Grant Program	TWC	Sectoral-focused	This program awards grants to community colleges and other educational institutions for the purchase of equipment necessary for career and technical education programs. Courses must lead to a credential in a high-demand occupation.
Lone Star Workforce of the Future Fund	TWC	Sectoral-focused	This program aims to increase the number of qualified workers for in-demand jobs by supporting education and training programs. The program provides grants primarily to community colleges and nonprofits that provide training programs.
Noncustodial Parent Choices Program	TWC	Target-population-focused	This program assists noncustodial parents who are unemployed or underemployed in finding stable employment to help meet their child support obligations.
Purchasing from People with Disabilities	TWC	Target-population-focused	This program employment opportunities for Texans with disabilities by purchasing goods and services created with labor from those with disabilities.
Reemployment Services & Eligibility Assessment Program	TWC	Target-population-focused	This program provides reemployment services to individuals receiving unemployment benefits, helping them return to work as quickly as possible.
Self Sufficiency Fund Program	TWC	Target-population-focused	Provides grants for training low-income individuals in skills that lead to employment and self-sufficiency. The program helps individuals obtain industry-recognized credentials. Grant recipients include community colleges and nonprofits.

TABLE A4

Name of program	State agency	Program type	Description
Apprenticeship Program	TWC	General-employer-focused	The Texas Workforce Commission facilitates the state's registered apprenticeship program. TWC designs and builds apprenticeship programs, registers employer programs with the U.S. Department of Labor, provides competitive grant programs using federal and state funding for intermediary entities who work with employers to set up new apprenticeship programs, and offers tax incentives for employers to set up apprenticeship programs.
Senior Community Service Employment Program	TWC	Sectoral-focused	This program offers training opportunities to low-income Texans aged 55 and older. Participants earn a wage for working part-time at non-profits or government agencies. The program takes advantage of federal funds.
Skills Development Fund	TWC	General-employer-focused	This program provides grants primarily to community and technical colleges for customized job training programs developed in collaboration with local employers.
Skills for Small Business Program	TWC	Sectoral-focused	This program supports small businesses by providing grants for employee training. The training is provided to workers through community colleges.
Texas Industry Partnership Program	TWC	Sectoral-focused	This program provides funding for skills training in certain high-growth sectors. The program leverages federal funding and matching funding from industry.
Vocational Rehabilitation - Business Relations	TWC	Target-population-focused	This program provides employment services for those with disabilities and works with businesses to hire these individuals.

NOTES: These programs were found by searching official State of Texas websites. Links with more information and the program description source are provided for each program. The table contains programs operating primarily through state funding, though some programs combine local, state, and federal funding. Program descriptions were adapted from linked program materials or websites.

TABLE A5

Sample of state-funded workforce development programs in South Carolina

Name of program	State agency	Program type	Description
ReadySC	South Carolina Technical College System	Sectoral-focused	This program provides recruiting and training assistance to companies that are expanding or looking to move to South Carolina. The program works with the state's 16 technical colleges to develop a training curriculum tailored to meet a company's workforce requirements at no cost to that company. The program focuses on a core set of industries.
Enterprise Zone Retraining Credit Program	South Carolina Technical College System	Sectoral-focused	This program reimburses companies for certain training and education provided to employees. The program primarily serves the manufacturing sector. Following approval by the State Board for Technical and Comprehensive Education, companies may claim a tax credit of up to $1,000 per worker for costs incurred training their workforce.
Apprenticeship Carolina™ Program	South Carolina Technical College System	General-employer-focused	Apprenticeship Carolina is a division of South Carolina's Technical College System that manages the state's Registered Apprenticeship program. The state provides incentives for companies to create registered apprenticeship programs. Companies with registered programs earn a $1,000 state tax credit for each registered apprentice employee who works at least seven months during each year.
Back to Work	South Carolina Department of Employment and Workforce (DEW)	Target-population-focused	The Back to Work program helps individuals in transitional housing, such as those facing homelessness or addiction, reintegrate into the workforce. Through a 40-hour, boot camp-style curriculum, participants gain job skills, including resume writing, interviewing, financial planning, and conflict resolution, while working with a coach. The program culminates in a targeted hiring event to help participants gain employment.
Second Chance	DEW	Target-population-focused	This training program teaches those incarcerated but soon-to-be-released soft workplace skills and employment procurement skills. They also connect these job seekers to employers and advocate on their behalf. There are also tax credits available to employers who hire out of this program.

TABLE A5 CONT.

Name of program	State agency	Program type	Description
Palmetto Academic and Training Hub (PATh)	DEW	N/A	This program is a searchable catalog of training providers in South Carolina. It is meant to be useful for both training providers to track their performance and training seekers to find training opportunities.
Regional Workforce Advisors (RWA)	DEW	N/A	RWAs coordinate workforce development services for students, educators, employers, and communities. They connect businesses with education programs, facilitate local partnerships, and provide career planning resources. Each RWA operates in one of the 12 Local Workforce Development Areas in the state.
Worldwide Interactive Network (WIN) Learning	DEW	N/A	South Carolina contracts with WIN Learning which provides career readiness curriculum, assessments, and credentialing solutions to help various stakeholders within the state's workforce system. It offers certifications in work readiness, soft skills, digital literacy, and more, which are recognized by employers statewide.

NOTES: These programs were found by searching official State of South Carolina websites. Links with more information and the program description source are provided for each program. The table contains programs operating primarily through state funding, though some programs combine local, state, and federal funding. Program descriptions were adapted from linked program materials or websites.

TABLE A6

Sample of state-funded workforce development programs in California

Name of program	State agency	Program type	Description
California Training Benefits Program	Employment Development Department	Target-population-focused	This program allows those receiving unemployment benefits to continue to receive payments while attending school or training. While many states' unemployment insurance systems have similar provisions, California's is among the most flexible.
High Road	California Workforce Development Board (CWDB)	Sectoral-focused	The High Roads program is an umbrella initiative administering and overseeing numerous workforce training programs in California. High Road programs are industry-led, prioritize employer-labor-intermediary partnerships, include workers' voices, and implement training solutions. Specific High Road programs span many sectors.
Regional CA	CWFDB	Place-based	Regional CA aims to meet the workforce needs of specific regions in California. The program aims to promote workforce development by facilitating collaboration between training providers, workers, and industry within a particular region. The specifics of how this is carried out vary by each region (15 regions).
Cross-System Analytics and Assessment for Learning and Skills Attainment Program ("CAAL Skills")	CWFDB	N/A	This is a state-level monitoring and evaluation program that collects and analyzes data on participation and outcomes for various workforce training programs.
Prison to Employment	CWFDB	Target-population-focused	This program creates opportunities through collaborative partnerships with state workforce programs and the state corrections systems so that formerly incarcerated and justice-involved individuals can successfully reenter society and the labor force.
Workforce Accelerator Fund	CWFDB, Employment Development Department (EDD), California Labor & Workforce Development Agency (LWDA)	Target-population-focused	The California Workforce Accelerator Fund supports innovative workforce development projects to improve labor market outcomes and skills for certain target populations. To promote experimentation and innovation, the program provides flexibility for grantees to design their own workforce development programs.

TABLE A6 CONT.

Name of program	State agency	Program type	Description
Breaking Barriers to Employment Initiative	CWFDB	Target-population-focused	This program provides additional support to individuals enrolled in other workforce development programs who face certain barriers to employment. The program provides grants to local workforce development boards in partnership with community organizations with experience providing services to a specific target population that faces barriers to employment.
Helping Justice-Involved Reenter Employment ("HIRE")	CWFDB	Target-population-focused	This program aims to increase employment among justice-involved individuals. The program provides grants to non-profits and community-based organizations to provide employment and skills training services to justice-involved individuals. The program funds organizations with relationships with employers that hire individuals with a criminal record.
Employment Training Panel	Employment Training Panel	General-employer-focused	The Employment Training Panel is a funding agency led by business, union, and state representatives. It funds a variety of initiatives that reimburse employers for the costs of job skills training for incumbent workers and, in some cases, new hires. It is funded through a special payroll tax.
Strong Workforce Program	California Community Colleges	Place-based	This program provides funding for local community colleges to expand career and technical education and workforce preparation. Funding is allocated at the local and regional levels, and the program aims to align with local and regional labor market needs.

NOTES: These programs were found by searching official State of California websites. Links with more information and the program description source are provided for each program. The table contains programs operating primarily through state funding, though some programs combine local, state, and federal funding. Program descriptions were adapted from linked program materials or websites.

TABLE A7

Sample of state-funded workforce development programs in New York

Name of program	State agency	Program type	Description
Career-Specific Vocational Training for Individuals with Intellectual and Developmental Disabilities	New York State Office for People With Developmental Disabilities (OPWDD) and New York State Office of Mental Health (OMH)	Target-population-focused	This program helps individuals with intellectual and developmental disabilities train for competitive jobs in fields like cleaning services, office work, food service, hospitality, and retail. It combines classroom instruction, job readiness training, and hands-on experience in the community. Participants also receive career planning support and gain real-world skills through work activities at local businesses.
New York State as a Model Employer Project	OPWDD and OMH	Target-population-focused	This program works to increase the employment of people with disabilities in state government. It removes barriers that make it difficult for people with disabilities to get hired and advance in their careers. The program also provides training to help state employees better support both colleagues with disabilities and other coworkers, creating a more inclusive workplace environment.
Business Model and Culture Change for Voluntary Provider Executive Leadership Teams	OPWDD and OMH	Target-population-focused	This program provides forums and training sessions to help voluntary service providers expand their offerings through the Office for People with Developmental Disabilities (OPWDD). It teaches providers how to deliver a complete range of day programs, job training, and employment services, ensuring clients receive consistent, high-quality support throughout their journey.
Training for Day Habilitation and Direct Care Staff in Employment and Vocational Services	OPWDD and OMH	Target-population-focused	This program trains staff in the Office for People with Developmental Disabilities (OPWDD) system on all available employment services. Staff learn how to help clients achieve competitive employment goals, reduce reliance on facility-based programs, and increase community involvement. The training covers how to provide individualized support services and prepare clients for the workplace.
Personalized Recovery Oriented Services	OPWDD and OMH	Target-population-focused	This program helps people with mental illness succeed in competitive jobs while managing their symptoms. Run by the Office of Mental Health, it provides comprehensive support including rehabilitation, treatment, career coaching, and other services. The program has dedicated Employment Specialists who work with local employers to create job opportunities, while regional coordinators connect these services with other state employment programs.

Name of program	State agency	Program type	Description
$2.3 Million Psychiatric Rehabilitation Symposium	OPWDD and OMH	Target-population-focused	This program develops training materials and resources to help mental health providers deliver evidence-based psychiatric rehabilitation services across New York State. Through the Curriculum and Resource Development Initiative, it creates educational materials that support clients' school and work goals. Mental health staff receive training in proven approaches including Wellness Recovery Action Planning, cognitive remediation, and trauma/resiliency education. The program is managed by the McSilver Institute for Poverty Policy and Research at NYU's Silver School of Social Work.
Empire State Teacher Residency Program	New York State Department of Labor (DOL) and State University of New York System (SUNY)	Sectoral-focused	This grant program provides local school districts with funding to establish 1 or 2-year residency programs for teacher graduate candidates. The program covers the cost of tuition and living expenses for the candidate.
Alternative Teacher Certification Program	DOL and SUNY	Sectoral-focused	This program provides alternative pathways to becoming a teacher, reducing time and cost barriers for aspiring educators. With $20 million in competitive grants, it supports the expansion of existing programs and the creation of new, high-quality, research-based master's-level certification programs. Priority is given to initiatives that partner with high-need school districts and address teacher shortages identified by the New York State Education Department (NYSED). Higher education institutions across New York State are eligible to participate.
Upskilling Paraprofessionals Program	DOL and SUNY	Sectoral-focused	This grant program supports recruitment and training for teaching assistants and paraprofessionals to help them obtain teacher certification through a registered baccalaureate-level teacher education program. The program is open to public colleges throughout the state and supports partnerships with high-needs school districts.
City University of New York (CUNY) Apprenticeship Program	City University of New York (CUNY)	Sectoral-focused, target-population-focused	This program integrates pre-apprenticeships with local companies into Applied Associate of Science (AAS) degree programs, which allows students to earn credits for workplace experience. AAS programs offer pathways to employment in technology, healthcare, business, and other fields.

Name of program	State agency	Program type	Description
SUNY Apprenticeship Program	SUNY	Sectoral-focused, target-population-focused	This program parallels the CUNY apprenticeship program but is accessed through the SUNY system.
CUNY Spring Forward	CUNY	Sectoral-focused, target-population-focused	This program connects first- and second-year college students to internships in in-demand fields like technology, healthcare, marketing, and communications.
CUNY Internship to Employment	CUNY	Sectoral-focused, target-population-focused	This program places college seniors and recent graduates into paid internships with a small business. At the conclusion of the internship, the business may hire the intern for a full-time role with a wage subsidy paid by the state.
SUNY Internship Program	SUNY	Sectoral-focused, target-population-focused	This program allocates $12 million to help overcome barriers to placing SUNY students into internships. The governor also announced the Climate Corps Internship Program which would provide internship opportunities for students in state agencies with climate or sustainability missions.
Diversity in Medicine Program	New York State Department of Health (DOH), and SUNY	Sectoral-focused, target-population-focused	The $3.6 Million Diversity in Medicine Program, started in 1991, provides a path for students overcoming adversity to enter medical school. The program supports five post-baccalaureate programs and provides scholarships. The core of the program consists of a 12-month postbaccalaureate program preparing underrepresented students to enter medical school. The program is administered by the Associated Medical Schools of New York (AMSNY)
Caregiver Flexibility for Direct Care Workers	New York State Department of Health (DOH)	Sectoral-focused	The $78 Million Caregiver Flexibility for Direct Care Workers initiative aims to create a model for training universal long-term care workers. It includes funding for training centers, support hubs, and a stackable credential curriculum. The program is anticipated to launch in 2024.
Financial Burden Relief for Health Care Workers	New York State Department of Health (DOH)	Sectoral-focused	The $94 Million Financial Burden Relief for Health Care Workers program offers financial support for healthcare education in New York State. It covers tuition, instructional costs, and provides stipends, including a $15 million scholarship allocation. The program is expected to launch in 2024.

Name of program	State agency	Program type	Description
Training Capacity Expansion for Statewide Institutions	New York State Department of Health (DOH)	Sectoral-focused	The $45 Million Training Capacity Expansion aims to increase training capacity in medical institutions. It includes investments to establish new training programs and innovative approaches. Launched in March 2023, DOH is currently working with awardees on contract terms.
Pre-Medical Opportunities	SUNY	Sectoral-focused, target-population-focused	The $2 Million Pre-Medical Opportunities program supports promising disadvantaged students to pursue careers in medicine through academic support, mentoring, and summer enrichment programs. Since its launch, it has supported 57 students, providing each with a $5,000 award and mentorship.

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1775 Massachusetts Ave NW,
Washington, DC 20036
(202) 797-6000
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