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The Workforce Almanac: System-Level View of U.S. Workforce Training Providers

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THE PROJECT ON WORKFORCE
HARVARD Kennedy School
MALCOLM WIENER CENTER
for Social Policy

The Workforce Almanac: A System-Level View of U.S. Workforce Training Providers

Harvard Project on Workforce

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Executive Summary

The future of work increasingly requires workers of all education levels to reskill and upskill. As the rate of emerging technologies integrating into work rises, so do the costs to people who do not update their skills. Crucial skills for the future of work can be learned in reskilling and upskilling workforce programs.

While the U.S. workforce development sector provides an infrastructure for training workers to succeed in the workplace, this sector goes largely unrecognized due to its fragmentation. Practitioners and researchers alike have struggled to understand the connected picture of how higher education institutions, apprenticeships, nonprofit organizations, and for-profit organizations train American workers.

This working paper describes the Workforce Almanac, a first-of-its-kind effort to understand workforce training at a system-wide level. We provide a new open-source directory of nearly 17,000 workforce training providers across the United States. This dataset (available at http://www.workforcealmanac.com) offers the most comprehensive view to date of U.S. workforce training providers, including provider names, locations, and types. To create this Almanac, we combined training provider information from four distinct sources into one new dataset, capturing federal Registered Apprenticeship providers, nonprofit providers, Workforce Innovation and Opportunity Act (WIOA)-eligible training providers, and higher education providers.

The Workforce Almanac interactive portal (http://www.workforcealmanac.com) allows users to explore workforce training providers at the local, state, and national levels. By pairing provider locations and types with U.S. Census data, this accompanying resource helps practitioners, policymakers, philanthropists, and researchers explore how workforce training opportunities are serving different areas and communities. Users can also download the data and pair it with any other data–such as labor market demand trends, data on local employers, information about workforce development funding opportunities and priorities, and more–to further explore questions of their interest. Use cases may include:

- Policymakers, including state and local workforce boards, can integrate the Almanac data with other more granular information to improve their decision-making on resource allocation and to work more strategically with training providers serving their areas;
- Philanthropies can find communities with a high need for investment and better inform their grantmaking strategies;
- Training providers can explore what other providers may be serving the areas they are looking to cover for benchmarking or collaboration purposes;
- Intermediaries and employers can better understand the local and regional training provision landscape to match learners and workers to existing training opportunities, or from training to employment opportunities;
- Researchers in the field can explore other geospatial dimensions of this data—including local labor markets, metropolitan areas, and rural areas—to produce new insights into the workforce development sector.

To demonstrate the kinds of analysis possible, we compare the presence and types of short-term, post-high school workforce training providers in different U.S. regions and states. Some of our findings include:

- **Of the nearly 17,000 workforce training providers in the U.S., only about one-third are eligible for federal WIOA funding.** This suggests that at least two-thirds of workforce development providers operate outside of WIOA, the primary federal law funding workforce development.
- **The Midwest and Northeast are the most served by workforce training providers, while the South and West are the least served.** For every 100k workers, the Northeast has 11 providers, compared to 10 in the South. For every 100k unemployed people, the Midwest has 296 providers, compared to 256 in the West.
- **The number of workforce training providers serving the labor force across states varies widely,** from 6 per 100k workers in Connecticut to 32 per 100k workers in Maine.
- **The makeup of workforce training providers serving communities in different states also varies widely.** Some states, such as Massachusetts, rely heavily on apprenticeship sponsors, while others, such as Maine, Wyoming, and Alaska, rely more heavily on WIOA-eligible providers.

- **West Virginia has more than 5 institutions of higher education that primarily provide short-term workforce training per 100k workers**—5 times the ratio in Alaska, and more than double the national average of 2.5.
- **Maine has over 25 WIOA-eligible providers per 100k workers**—nearly 22 times the number of WIOA-eligible providers per 100k workers in Hawaii.
- **States in the central U.S. seem to have fewer nonprofits that provide job training.** Kansas, Nebraska, North Dakota, New Mexico, South Dakota, Oklahoma, and Iowa have fewer than 2 job training nonprofits per 100k workers. Washington DC, on the other hand, has over 16 job training nonprofits per 100k workers.
- **Massachusetts is the state with the highest concentration of Registered Apprenticeships.** It has over 400 Registered Apprenticeship sponsors and more than double the ratio of providers to 100k workers (11) and to unemployed population (373) than the state with the next highest ratio, Rhode Island (5 and 138, respectively).

Introduction

The case for workforce training in the U.S. is as strong as ever. While good-paying jobs increasingly require education or training beyond high school, over 60% of U.S. workers do not hold a 4-year college degree [1]. Almost 70 million workers with a high school diploma but without a bachelor's degree (BA) are "skilled through alternative routes," and Black and Latinx workers are disproportionately more likely to enroll in education and training programs outside of traditional BA-granting institutions [2].

The market for non-BA pathways is growing. In addition to hundreds of billions spent on community college degree programming, recent research estimates that the U.S. spends $75 billion on non-degree private education and training institutions and nearly $600 billion on employer-sponsored training [3]. Americans also increasingly value training that aligns with career opportunities; for over 1 in 2 Americans without a traditional degree, a guaranteed employment outcome (including a wage increase) motivates enrolling in additional education [4].

The pandemic further exacerbated the gap between job openings and job seekers in the U.S. The ratio of open jobs to unemployed workers has grown from 1.2 to 1.5 between February 2020 and August 2023 [5]. The challenges U.S. employers are encountering in finding qualified workers, coupled with longer-term skill mismatches, have increased the incentives for employers to train their existing workers to acquire new skills. Further, historically low unemployment rates have driven up wages for low-wage workers, reinforcing competition for education and training programs [6].

These trends indicate an expanding role for workforce training providers. For those who choose to return to education from the workforce, many will likely choose workforce training due to its shorter and more affordable programs, which allow for a quicker and potentially targeted return to the labor market.

Despite the billions in federal, state, private philanthropic, and employer dollars spent on an expanding set of nonprofit, for-profit, and public programs, and their essential role in the U.S. economy, we know very little about the U.S. workforce development sector as a whole. System-level data is sparse or incomplete, program-level data is dispersed, and replicable drivers of program success remain ill-understood. The majority of earlier landscape analyses, carried out by practitioners or funders, have a limited scope. In great part due to data and evidence fragmentation, these analyses are often siloed, focusing solely on community colleges, public workforce systems, or Registered Apprenticeship providers.

The fragmentation of training provision, funding streams, and services is a persistent challenge in understanding U.S. workforce development, not only for research but also for policy and implementation [7]. The fragmentation also challenges individuals and organizations struggling to navigate the plethora of options—from workers and learners to those who advise them or serve as intermediaries, like career coaches and workforce boards, as well as employers [8].

There is no comprehensive information on program costs, pedagogical approach, characteristics, duration, or outcomes across the system. To understand the multitude of workforce training options, we need to identify where providers are located, measure key provider characteristics, and consider the entirety of a worker's life cycle, aspirations, and needs.

The Workforce Almanac is a first-of-its-kind effort to help us move from a narrow and siloed understanding of workforce training provision towards a worker-centered, comprehensive approach to a system. This paper summarizes our approach as follows:

- Section I defines workforce training using a frame that centers workers and learners.
- Section II outlines our process for building the Workforce Almanac, a dataset that captures the population of workforce training providers in the U.S.
- Section III describes the Almanac's coverage, including areas of strength and areas for expansion.
- Section IV provides a brief descriptive overview of the U.S. workforce training providers represented in the Almanac.

I. Defining Workforce Training

The U.S. workforce development system spans industries and skill sets, serves a variety of audiences, and utilizes many different program and funding models [9]. Organizations within the workforce development system include workforce training providers, workforce boards, philanthropic funders, one-stop shops, intermediary organizations, and more. Broadly, this system has two main goals:

1. To help workers navigate the labor market and connect to employment, and
2. To provide training that helps workers and learners develop work-relevant skills.

In the Workforce Almanac, we focus on workforce training providers. We made this decision because, in practice, there are large and publicly-available data sources on training providers that we could compile.

I.I Workforce Training Providers

We define workforce training providers as entities that offer **short-term, (i.e., less than two years) post-high school opportunities (i.e., the maximum requirement is a high school diploma) where learners gain work-relevant skills in service of job attainment.** Working directly with learners to develop work-relevant skills, these organizations or institutions include community colleges, community-based organizations, for-profit private training providers, technical colleges, social impact organizations, industry associations, unions, company-provided training, and occasionally state and local governments. Though they vary in many ways, these providers share four core characteristics (Table 1).

Table 1: Four Characteristics of a Workforce Training Provider

Credential Type	Where credentials are offered, they must have the capacity to stand alone without further programming. Such credentials include certificates, applied associate's degrees, certifications, and occupational licenses completed as a culmination of programming.
Length	Training has a direct application to job attainment and is no more than two years duration (full-time).
Prerequisites	Training must require no more education than a high school diploma.
Intent	Workforce training must be designed with the intent to prepare learners to secure a job. The intention of the training is to ensure that learners can, theoretically, find a job related to the field of training without further development. While the learner's intention is undoubtedly important, the provider's intention is the defining characteristic. Providers that offer training aimed primarily at "lifelong learning" are

	not included in our definition, unless their intent is upskilling or reskilling in service of job attainment.

Source: Project on Workforce

Despite the growing importance of pursuing education and training after high school, no comprehensive national data source of workforce training providers exists. The Department of Labor's recently launched TrainingProviderResults.gov (TPR) only includes providers that states report as eligible for federal funding under the Workforce Innovation and Opportunity Act (WIOA). The Integrated Postsecondary Education Data System (IPEDS) provides data on colleges and universities but does not clearly indicate those that provide short-term credential or workforce-focused training. Focusing exclusively on any one publicly-available dataset will inevitably exclude many types of workforce training providers.

We fill this need by creating a taxonomy of workforce training providers that captures a broader set of workers' education and training options across locations and types. Because workers make choices between multiple types of providers, the Workforce Almanac is a more comprehensive way to understand this system than siloed analyses by provider type.

II. Building the Workforce Almanac

To our knowledge, no dataset reflects the comprehensive view of workforce training providers as we defined it in section I. However, pre-existing data sources can approximate parts of the definition. To build a more accurate and comprehensive view, we combined these existing data sources into one unified frame.

Our priority is for this unified dataset to be a resource accessible to everyone, that others in the system can benefit from and utilize, enrich, and improve over time. Therefore, we focus on publicly-available data sources. The data can be visualized and downloaded in full at http://www.workforcealmanac.com/ [10].

II.I Compiling Publicly-Available Data Sources

To create the Workforce Almanac, we selected four publicly-available data sources that provide information about training providers (Table 2). We chose these datasets based on their match to and coverage of our definition of workforce training providers. In most cases, rather than include the entirety of the data, we developed a methodology to select pieces of these datasets that meet our definition, as described below.

Table 2: Four Publicly-Available Datasets in the Workforce Almanac

Dataset	Description	Our Use
The Integrated Postsecondary Database System (IPEDS), Survey Year 2020 [11] *# of Providers =* 3,778	IPEDS contains information and data from higher education institutions across the United States. Any postsecondary institution that has received—or has applied to receive—federal funds to support students is mandated by law to submit data to IPEDS. Therefore, though IPEDS is limited in its data collection (institutions self-report answers to a select set of questions), it is the most comprehensive dataset on American postsecondary education institutions.	To align with our definition of workforce training providers, we utilized a subsection of IPEDS that captures primarily non-degree-granting institutions and institutions that confer a majority of their credentials at the sub-baccalaureate level. Most of these institutions are community colleges and technical colleges. We included public, private nonprofit, and private for-profit institutions that meet these criteria. We filtered for providers that IPEDS classifies as "Non-degree-granting, sub-baccalaureate", "Degree-granting, Associate's and certificates", and "Degree-granting, not primarily baccalaureate or above."
Registered Apprenticeship Partners Information Database System (RAPIDS), Fiscal Year 2020 [12] *# of Providers =* 2,889	The Department of Labor maintains a list of federal Registered Apprenticeships—regulated apprenticeship programs that aim to provide career pathways in high-demand fields for workers in "apprenticeable occupations." Registered Apprenticeships are approved by the Department of Labor or State Apprenticeship Agencies and must be industry-vetted and paid. These structured on-the-job learning opportunities are supplemented with classroom-based education, resulting in an industry-recognized credential for apprentices. Registered Apprenticeships may be operated by employers, unions, community colleges, business associations, community-based organizations, workforce investment boards, or occasionally state and local governments. Registered Apprenticeships are commonly found in fields such as construction, manufacturing, health care, utilities, and transportation. Apprenticeships differ from other paid work-based learning opportunities through occupation type, hourly requirements, integration of classroom training, and culmination in an industry-recognized credential [13].	The Workforce Almanac includes all Registered Apprenticeship providers that are multi-employer and have active apprentices and an active status (as opposed to "canceled") as cataloged by the Department of Labor's RAPIDS apprentice and program datasets. Becoming a Registered Apprenticeship provider offers a platform for posting job openings, a structure for providing training options to workers, and, in some states, tax credits and employee tuition benefits.
Internal Revenue Service (IRS) [14] *# of Providers =* *4,857*	The IRS publishes a comprehensive list of tax-exempt organizations required to complete and submit Form 990 annually. These organizations span several fields and are classified using the National Taxonomy of Exempt Entities (NTEE), which identifies the organization's primary exempt activity. These organizations are typically "nonprofits" or "community-based organizations."	We selected subsections of NTEE classifications [15] related to education (Core Code B) and employment (Core Code J) to include in the Workforce Almanac. We included primary exempt activities related to our definition of workforce training providers, including "Vocational, Technical Schools" (B30), "Community or Junior Colleges" (B41), "Employment Procurement Assistance, Job Training" (J20), "Vocational Counseling, Guidance and Testing" (J21), "Vocational Training" (J22), "Vocational Rehabilitation" (J30), "Goodwill Industries"(J32), and "Sheltered Remunerative Employment, Work Activity Center Not Elsewhere Classified (N.E.C.)" (J33).

Source: Project on Workforce

II.II Combining Datasets, Deduplicating Records, and Establishing a Common Taxonomy

Many Workforce Almanac training providers appear in multiple data sources (e.g., nonprofit colleges are registered in IPEDS and the IRS). To ensure that the Almanac includes unique providers, we underwent a multistep data standardization process.

First, we identified any duplicate records of a provider and kept the record with the most detailed and accurate information. This was a lengthy and complex process with multiple iterations, but it was systematic (SQL-based) and fully reproducible.

We began this deduplication process by standardizing provider addresses across datasets using the U.S. Census Bureau's GeoCoder Batch API [17]. Next, we identified providers with similar names and identical addresses using a combination of Jaro-Winkler [18] and Levenshtein [19] distance algorithms. If provider names at the same address were 60% or more similar, we assumed they were duplicates and assigned them the same unique identifier. After a thorough manual review, we repeated this process by reducing the identical address requirement to only the same state and city and increasing the name similarity threshold to 90%. This allowed us to further eliminate duplicate records.

Finally, where there were duplicates, we kept the record with the most detailed and accurate information by creating a data source prioritization scheme (Table 3).

Table 3: Deduplication based on data source prioritization

Step	Is this provider found in the following source and category (even if also found in others)?
	If yes, keep the entry as found in that source and category and remove duplicates in other sources.
	If no, move to the next step.
1	IPEDS
2	IRS – B41: Community or junior colleges
3	TPR – One of the three 'higher ed' types
4	RAPIDS – Community college / university
5	IRS – All other categories
6	TPR – Private non-profit
7	RAPIDS – Community-based organization
8	RAPIDS – All other categories
9	TPR – National apprenticeship
10	TPR – Private for-profit
11	TPR – Public
12	TPR – Other or Null

Source: Project on Workforce

To begin analyzing the workforce training system as a whole, we organized training providers into four major types based on their source dataset: 1) Institutions of higher education (IPEDS), 2) Registered Apprenticeships (RAPIDS), 3) Nonprofit organizations (IRS), and 4) WIOA-eligible providers (TPR) (see Table 4). The Workforce Almanac includes four binary variables that capture the source(s) of each provider: *in_ipeds*, *in_rapids*, *in_irs*, and *in_tpr*. By capturing the data source, these variables align each provider to one or more of the four major types. The Almanac also reports each training provider's subtype from the original data source in the variables *org_subtype_in_ipeds*, *org_subtype_in_rapids*, *org_subtype_in_irs*, and *org_subtype_in_tpr*.

Table 4: Workforce Training Provider Types and Subtypes

Institutions of higher education	Registered Apprenticeships	Nonprofit organizations	WIOA-eligible providers
These include public, private nonprofit, and for-profit postsecondary institutions that are primarily non-degree-granting or confer a majority of their degrees as sub-baccalaureate credentials (i.e., certificates and/or associate's degrees). These training providers are found in IPEDS, and include the following IPEDS-generated subtypes: "Degree-granting, associate's and certificates"; "Degree-granting, not primarily baccalaureate or above"; and "Non-degree-granting, sub-baccalaureate."	These include federally Registered Apprenticeships. These training providers are found in RAPIDS, and include the following RAPIDS-generated sponsor subtypes: "Business Association"; "City/County Agency"; "Community Based Organization"; "Community College/University"; "Employer"; "Federal Agency"; "Foundation"; "Intermediary"; "None"; "Other"; "State Agency"; "Union/Labor"; and "Workforce Investment Board."	These are tax-exempt organizations that provide job training. These training providers are found in the IRS dataset, and include the following IRS-generated subtypes captured in Core Codes: "Community or Junior Colleges"; "Employment Procurement Assistance, Job training"; "Goodwill Industries"; "Sheltered Remunerative Employment, Work Activity Center Not Elsewhere Classified (N.E.C.)"; "Vocational Counseling, Guidance and Testing"; "Vocational Rehabilitation"; "Vocational Training"; and "Vocational, Technical Schools."	These providers include workforce development training providers eligible to receive federal dollars for training services under WIOA. These training providers are found in TPR, and include the following TPR-generated subtypes: "Higher Ed: Associate's Degree"; "Higher Ed": Certificate of Completion"; "National Apprenticeship"; "Other"; "Private For-Profit"; "Private Nonprofit"; and "Public."

Source: Project on Workforce analysis of IPEDS', RAPIDS', IRS', and TRP's data dictionaries.

Using the two sets of variables (source type and subtype), we created a new common taxonomy to classify training providers into 14 categories across all four major provider types (Table 5). This common taxonomy has the advantage of allowing for analyses and decision-making based on more granular classification information that cuts across different data sources on workforce training providers. Providers may be classified as more than one category, and provider categories may come from any of the four types.

Finally, 3,267 providers are left unspecified in our taxonomy because there was not enough information in the original data sources to systematically categorize them. In RAPIDS, 1,653 Registered Apprenticeships did not list a sponsor subtype and therefore did not align neatly with a category. In TPR, 1,621 providers do not have a specified subtype, or are listed as "Public." Because we cannot systematically determine the purpose of these unspecified or "Public" providers to group them into categories, we choose to leave them uncategorized in our taxonomy. Importantly, while we cannot categorize these providers in our taxonomy, we still have some information about them through their type. Though we cannot categorize all RAPIDS providers with a sponsor, we know that all 2,889 training providers in RAPIDS are Registered Apprenticeships. Similarly, we know that all 5,977 training providers in TPR are WIOA-eligible.

Table 5: Workforce Training Provider Common Taxonomy

Category	Definition
Highest degree certificate	Institution of higher education that does not offer degrees above the sub-BA certificate level.
Highest degree associate's	Institution of higher education that offers associate's degrees (and may also offer sub-BA certificates) but does not offer bachelor's degrees and above.
Highest degree bachelor's+	Institutions of higher education that offer bachelor's degrees and above, but primarily (more than 50%) confer sub-BA degrees and certificates.
Other higher education institution	Institution of higher education not included in IPEDS (and therefore not receiving Title IV funding) but eligible to receive WIOA funds, or offering a Registered Apprenticeship, or completing an IRS Form 990.
Private for-profit	Organization eligible to receive WIOA funds and categorized as a private for-profit organization in TPR.
Apprenticeship sponsor / business association	Registered Apprenticeship operated by a business association.
Apprenticeship sponsor / employer	Registered Apprenticeship operated by an employer.
Apprenticeship sponsor / intermediary	Registered Apprenticeship operated by an intermediary.
Apprenticeship sponsor / government	Registered Apprenticeship operated by a governmental organization.
Apprenticeship sponsor / Workforce Investment Board	Registered Apprenticeship operated by a workforce investment board (WIB).
Apprenticeship sponsor / foundation	Registered Apprenticeship operated by a foundation.
Apprenticeship sponsor / labor/union	Registered Apprenticeship operated by a labor union.
Apprenticeship sponsor / other	A Registered Apprenticeship operated by another entity (tagged as "other" in RAPIDS) or an unregistered national apprenticeship eligible to receive WIOA funds.
Job training nonprofit	Tax-exempt nonprofit organizations focusing on employment procurement assistance, job training, vocational counseling, vocational guidance, vocational testing, vocational training, vocational rehabilitation, or sheltered remunerative employment, or categorized as vocational schools, technical schools, Goodwill Industries, or work activity centers. Also includes organizations eligible to receive WIOA funds and categorized as private nonprofit organizations in TPR, and community-based organizations operating Registered Apprenticeships.

Source: Project on Workforce

II.III Testing The Almanac

After combining these datasets under a common taxonomy, we tested and improved data quality across two main dimensions.

First, we evaluated the fidelity of our deduplication efforts. We assessed whether we had removed any training providers that were not duplicates. To do this, we looked into clusters of providers identified as duplicates and analyzed the 1,646 providers in this group by hand. Following this process, we found a total of 58 providers that appeared not to be duplicates. The most common reason behind unnecessary eliminations was that a handful of providers operated in satellite locations but reported their addresses at headquarters. In these few cases, since their satellite addresses were not available, we had to eliminate the satellite providers and keep only the headquarters location of the provider. The second most common reason was that our 90% similarity cutoff eliminated some providers with very similar names and addresses, but that were not the same training provider. Because there was no systematic way to correct those issues, the Almanac eliminated a very small percentage (less than 0.5%) of unique training providers.

Second, we assessed the relevance of the training providers that remained in the Almanac against our working definition ("short-term post-high school opportunities where learners gain work-relevant skills in service of job attainment"). Despite our efforts to capture only the training providers aligned with our definition, we anticipated that our first compilation would still contain some providers that did not align. We took a 2.5% random sample of the Almanac to assess 1) which parts of our definition were well-represented, 2) which parts of our definition were missing or under-represented, and 3) if there was any systematic cleaning that could be done to better align providers with our definition. This manual check resulted in several systematic edits to the dataset. First, we eliminated a handful of providers operating outside of the U.S. and its territories. Second, we identified and dropped providers serving high school students or preparing adults for high school degrees or GEDs. We did this using a select series of keywords in provider names, including "high school" and "adult school." Finally, we dropped providers that appeared to mostly finance the system or help workers search for jobs rather than providing training for employment. These included providers whose names indicated that they were foundations, funds, trusts, or career centers.

III. What is in the Workforce Almanac

In total, the first edition of the Almanac contains 16,781 providers operating across the United States. It includes non-degree-granting and sub-BA degree-granting institutions of higher education, private nonprofit organizations, private for-profit organizations, and apprenticeship programs.

Because of data limitations, this dataset represents some training provider types better than others. We are confident that we included nearly every training provider eligible for federal funding—including tax-exempt organizations—but we likely missed some training providers that are not eligible for any federal funding, particularly for-profit and online training providers.

Of all training provider types, higher education institutions that provide workforce training, such as community colleges, technical colleges, and departments of four-year colleges offering associate's degrees or workforce programs, have the most robust coverage in the Almanac. The Higher Education Act of 1965 requires institutions that receive or apply for Title IV funding to submit data to IPEDS, which results in a nearly 100% response rate for the annual IPEDS survey. IPEDS also includes some institutions that do not receive Title IV funding, though this reporting is not mandatory. Since the vast majority of institutions of higher education receive Title IV funding, they are captured in the Almanac.

The reliability of the Almanac's coverage of philanthropically-funded nonprofit training providers currently depends on two factors: first, whether their tax-exempt organizations accurately self-identify in the Form 990s they submit to the federal government, and second, whether we have correctly identified all of the relevant identification codes that fit within our definition of workforce development training providers (detailed in Table 2). While we assume that the IRS and the National Center for Charitable Statistics categorize these organizations correctly, we also conducted a vetting process to ensure that these codes and subcodes overwhelmingly align with our definition of a workforce development training provider.

Though the IRS should publish all nonprofits in the United States (or organizations that complete the Form 990), we may have neglected some Core Codes that include training providers relevant to workforce development (see Tables 2 and 4 for a list of the IRS Core Codes we captured). During data cleaning, we also may have captured some private nonprofit organizations that do not provide training. In general, we sought to include as many potential training providers as possible and, when in doubt, leaned towards inclusion over exclusion.

The Department of Labor publishes federal Registered Apprenticeships, and we are confident that the Almanac fully represents the apprenticeships that are multi-employer and have active apprentices and an active status (as opposed to "canceled") as cataloged in RAPIDS. However, in several U.S. states, State Apprenticeship Agencies (SAA), rather than the Department of Labor's Office of Apprenticeship (OA), are responsible for overseeing Registered Apprenticeships. These states may use a unique system other than RAPIDS for registering apprenticeships [20]. In the latest release of RAPIDS, the OA announced a data modernization effort that facilitated SAAs' data transfer into RAPIDS and resulted in RAPIDS capturing individual registered apprenticeship data from most U.S. states. OA is still working with five states and territories (Minnesota, Oregon, Vermont, Washington state, and the District of Columbia) to have their apprenticeship data better represented in RAPIDS future releases [21].

The extent to which we include the unregistered apprenticeships is unclear. Some nonprofit apprenticeship sponsors are incidentally present in IRS data, although IRS data does not include apprenticeships as a separate subtype. We also bring in unregistered national apprenticeship sponsors that are eligible for WIOA funding and captured through the TPR database. However, many apprenticeships probably run less formally or have not been designated as WIOA-eligible providers. There is no comprehensive dataset of these apprenticeships, so we are unable to estimate how many of them we capture.

Private for-profit training providers are likely the least well-represented in the Almanac, primarily because not all of these providers are eligible for federal funding. We are only able to include private for-profit training providers that appear as postsecondary institutions, federal Registered Apprenticeships, or are listed through TPR as WIOA-eligible providers. Therefore, it is likely that we miss some for-profit organizations and industry associations that provide job training. Additionally, outside of Registered Apprenticeships, we are largely unable to include company- or employer-provided training, both because no publicly-available dataset captures this type of training and because it is nearly impossible to ensure that this programming is targeted at workers who do not have a bachelor's degree. These data constraints limit the coverage of private for-private providers in the Almanac to date.

The Almanac is also susceptible to self-reporting inconsistencies. Our component data sources are limited by the typical biases that come with self-reporting. Because the first version of the Almanac only includes training providers' names, addresses, and types, self-reporting inconsistencies in the Almanac are limited to self-reporting mistakes and variations in these data points.

Finally, the Almanac may include some providers that are no longer operational. Much of this data was collected during the COVID-19 pandemic, when many training providers underwent periods of change that may have resulted in permanent closure. While IPEDS and IRS nonprofit data are updated annually, RAPIDS is only updated when providers choose to remove themselves. It is up to individual states and the Department of Labor to keep RAPIDS and TPR up to date. In a preliminary analysis of some of the Almanac's training providers, we find that some workforce development training providers are now defunct.

III.I Other Data Limitations

The Almanac is the most comprehensive dataset of its kind, but it is just the beginning. Here are some of the current limitations and how we are addressing them:

1. *The Almanac includes limited information about providers.* While our component data sources supply information about providers' locations and typology, there is little cohesion or overlap in information across sources beyond those data points. To remedy these gaps, we are implementing a new survey instrument to build more detailed insights about the workforce training providers.

2. *The Almanac provides information about providers, not programs.* The current version of the Almanac maps the geographic distribution of different types of providers of short-term post-high school workforce training in the U.S. It supports a more informed inquiry into the communities and areas that are served and underserved by the workforce training providers. In the next stage of our work, we aim to expand our analysis of our component data sources to include more information about providers' programs and participants. This will allow for a more complete analysis of which kinds of occupations providers are preparing workers for.

3. *The Almanac mainly includes providers that receive federal funding or exemptions.* Broadening the Almanac and keeping it as a fully accessible, downloadable resource is a difficult task. Data sources documenting employer-provided training, unregistered apprenticeships, non-Title IV institutions of higher education, and private for-profit training providers that do not receive federal funding are limited, and publicly-available sources on them are nearly non-existent. To address this issue, the Almanac resides in a single, public-facing digital hub where we intentionally include a feature for training providers to apply to provide information or correct an existing record. Additionally, we are convening key stakeholders from the field to provide additional feedback on possible extensions to the Almanac.

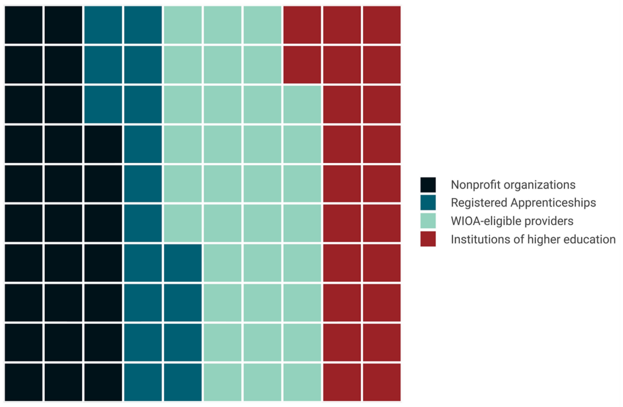
IV. Findings from the Workforce Almanac: How are different regions and states served by different types of workforce training providers?

IV.I National Findings

Key takeaway: Of the nearly 17,000 workforce training providers in the U.S., two-thirds are not eligible for federal WIOA funding.

There are 16,781 workforce training providers in the United States. They are reasonably well-distributed across the four types of providers (Figure 1). The largest group is WIOA-eligible providers, which represent about one-third of all workforce training providers. This suggests that at least two-thirds of workforce training providers operate outside of the federally-funded WIOA system. However, many providers receive federal funding in some other way, including most institutions of higher education (22%) and nonprofits (28%) through tax exemptions. The smallest group of providers is Registered Apprenticeships (17%).

Figure 1: Breakdown of the types of U.S. workforce training providers

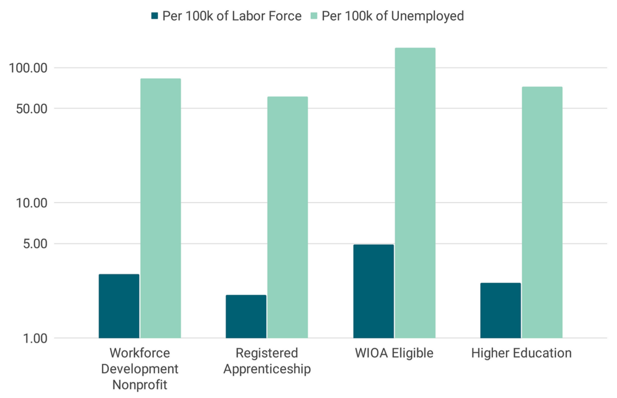


Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Nationally, there are around 5 WIOA-eligible providers, 3 job training nonprofits, 2.5 institutions of higher education, and 2 Registered Apprenticeship programs for every 100k people in the labor force.

96% of workforce training providers represent only one type across the four major types captured in the Workforce Almanac. Of the remaining providers, nearly all appear in both IPEDS and TPR, meaning they are institutions of higher education that are also WIOA-eligible.

Figure 2: National ratio of providers to 100k in the labor force



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.II Regional Findings

Key takeaway: The Midwest and Northeast are most served by workforce training providers.

In terms of the ratio of providers to 100k people in the labor force, the Northeast is the most served, and the South is the least served (Table 6). However, in terms of the ratio of providers to 100k unemployed people, the Midwest is the most served, and the West is the least served.

Table 6: Number of workforce training providers by region

Region	Ratio of providers to 100k in labor force	Ratio of providers to 100k unemployed
Midwest	10.7	296.2
Northeast	10.8	293.2
South	9.6	273.7
West	10.1	255.5

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.III State Findings

Key takeaway: The number and types of workforce training providers vary widely by U.S. state and territory.

At the state level, the concentration of workforce training providers varies much more widely than at the regional level (Table 7). For example, in Maine, there are 32.4 workforce training providers per 100k people in the labor force, while there are only 6.3 in Connecticut.

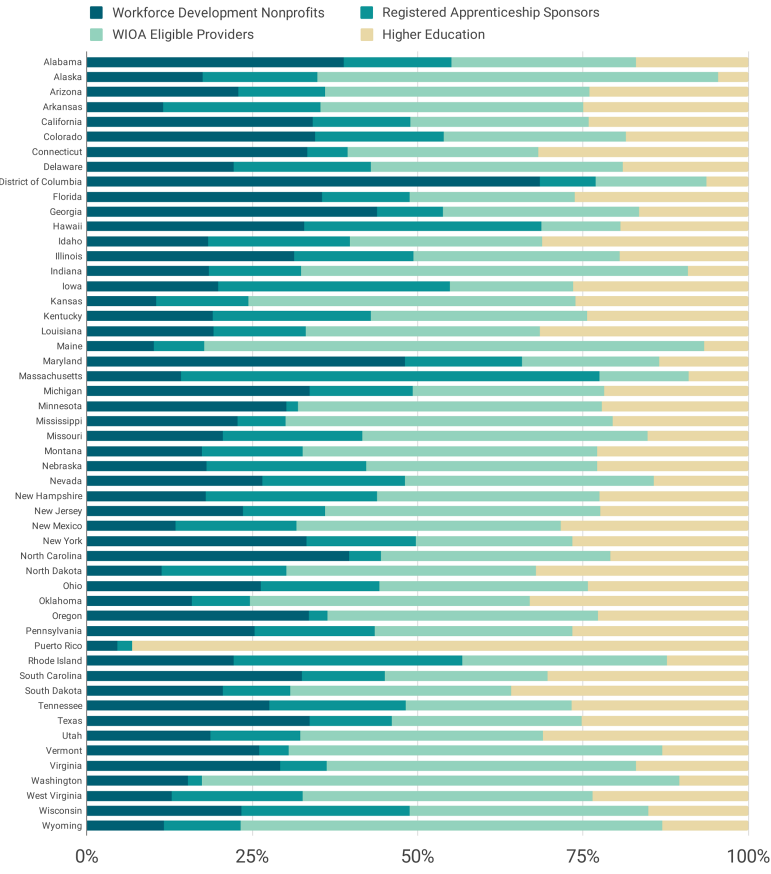
Table 7: Top five and bottom five states in terms of the number of workforce training providers per 100k people in the labor force

Top five states and territories	Ratio of providers to 100k in labor force	Bottom five states and territories	Ratio of providers to 100k in labor force
Maine	32.4	Connecticut	6.3
Alaska	24.1	Minnesota	6.6
Wyoming	23.5	Texas	7.3
District of Columbia	23.5	Nebraska	7.6
West Virginia	21.5	South Carolina	7.9

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Additionally, each U.S. state has a slightly different makeup of workforce training providers serving their communities (Figure 3). Some states, such as Massachusetts, rely heavily on Registered Apprenticeships, while others, such as Maine and Alaska, have more access to WIOA-eligible providers. Furthermore, some states, such as Kentucky and Pennsylvania, are relatively balanced in terms of the number of each type of provider.

Figure 3: Types of workforce training providers in each U.S. state and territory [23]



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.IV Institutions of Higher Education Findings

Key takeaway: U.S. regions have relatively equal ratios of institutions of higher education—that primarily provide short-term workforce training—to 100k in the labor force.

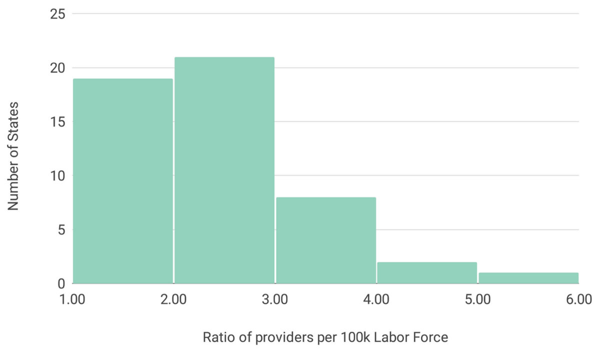
The South has the highest ratio per 100k people in the labor force and unemployed populations. The Midwest has the lowest ratio of institutions of higher education that primarily provide short-term workforce training to every 100k unemployed people.

Table 8: Number of institutions of higher education by region

Region	Ratio of providers to 100k unemployed	Ratio of providers to 100k in labor force
Midwest	61.0	2.2
Northeast	61.9	2.3
South	65.3	2.3
West	56.5	2.2

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Figure 4: Distribution of institutions of higher education by state



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Most U.S. states and territories have a ratio of between 1 and 3 institutions of higher education—per 100k people in the labor force—that primarily provide short-term workforce training, although a small number have more (Figure 4). West Virginia has the most institutions of higher education that primarily provide short-term workforce training per 100k people in the labor force, 5 times that of Alaska, the state with the fewest, and more than double the national average of 2.5.

Table 9: Top five and bottom five states in terms of the number of institutions of higher education per 100k people in the labor force

Top five states and territories	Ratio of providers to 100k in labor force	Bottom five states and territories	Ratio of providers to 100k in labor force
West Virginia	5.5	Alaska	1.1
Arkansas	4.5	Maryland	1.3
North Dakota	4.1	Indiana	1.4
Louisiana	4.0	Wisconsin	1.4
Montana	3.9	District of Columbia	1.5

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.V WIOA-Eligible Provider Findings

Key takeaway: The Midwest is most served by WIOA-eligible providers, and Maine has more WIOA-eligible providers than any other state.

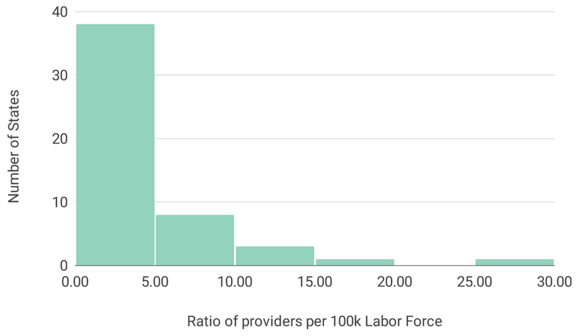
The Midwest has the highest ratio of WIOA-eligible providers to 100k people in the labor force and unemployed populations, while the South has the lowest ratio of WIOA-eligible providers.

Table 10: Number of WIOA-eligible providers by region

Region	Ratio of providers to 100k unemployed	Ratio of providers to 100k in labor force
Midwest	117.0	4.2
Northeast	91.6	3.4
South	89.9	3.2
West	102.9	4.1

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Figure 5: Distribution of WIOA-eligible training providers by state



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

The majority of U.S. states and territories have a ratio of between 1 and 5 WIOA-eligible providers per 100k people in the labor force, although a small number have more (Figure 5). Maine has the highest ratio of WIOA-eligible providers to 100k people in the labor force –nearly 22 times that of Hawaii, the state with the lowest ratio, and 5 times the national average.

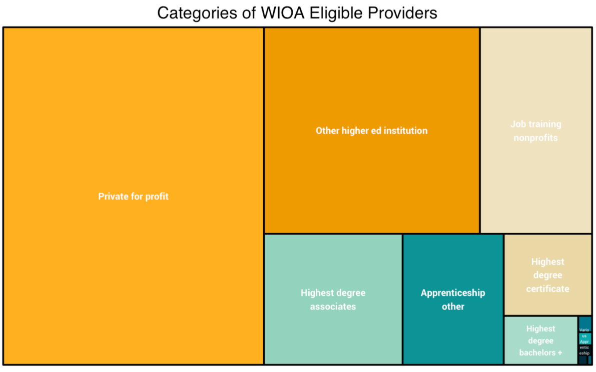
Table 11: Top five and bottom five states in terms of the number of WIOA-eligible providers per 100k people in the labor force

Top five states and territories	Ratio of providers to 100k in labor force	Bottom five states and territories	Ratio of providers to 100k in labor force
Maine	25.7	Hawaii	1.2
Wyoming	15.0	Iowa	1.8
Alaska	14.7	Connecticut	2.0
Washington	11.3	Maryland	2.0
West Virginia	10.3	New York	2.0

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

WIOA funds many different types of workforce training providers. Almost half of WIOA-eligible providers in the United States with sufficient data for categorization are private for-profit organizations. More than 1 in 3 are higher education institutions, and almost 1 in 5 are either apprenticeships or job-training nonprofits (Figure 6).

Figure 6: Breakdown of WIOA-eligible provider categories for those organizations that have sufficient data for categorization [24]



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.VI Job Training Nonprofit Findings

Key takeaway: The South is most served by job training nonprofit organizations, and the District of Columbia has the highest ratio of job training nonprofits per 100k in the labor force among U.S. states and territories.

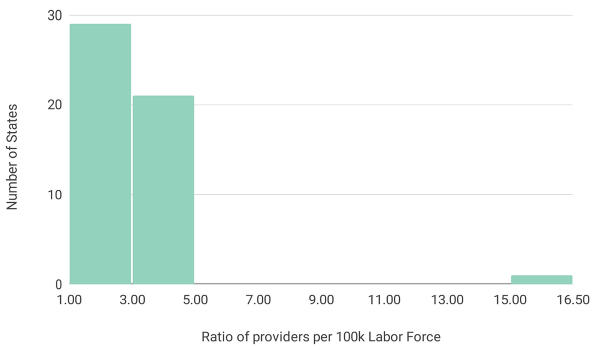
The South has the largest ratio of nonprofits to 100k in the labor force and unemployed populations (Table 12). Conversely, the Northeast has the lowest number of job training nonprofits in relative terms.

Table 12: Number of job training nonprofits by region

Region	Ratio of providers to 100k unemployed	Ratio of providers to 100k in labor force
Midwest	77.9	2.8
Northeast	71.8	2.6
South	92.0	3.2
West	73.5	2.9

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Figure 7: Distribution of job training nonprofits by state



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Most states and territories have a ratio of up to 5 job training nonprofits per 100k in the labor force (Figure 4). However, the District of Columbia has over 16 job training nonprofits to 100k in the labor force—about 3.5 times more than Maryland, the state with the second highest ratio, and 13 times more than Kansas, the state with the lowest ratio (Table 13).

Furthermore, many states in the central U.S.—including Kansas, Nebraska, North Dakota, New Mexico, South Dakota, Oklahoma, and Iowa—have fewer than 2 job training nonprofits per 100k people in the labor force. This is lower than the national mean of 3.

Table 13: Top five and bottom five states in terms of the number of job training nonprofits per 100k people in the labor force

Top five states and territories	Ratio of providers to 100k in labor force	Bottom five states and territories	Ratio of providers to 100k in labor force
DC	16.3	Kansas	1.2
Maryland	4.6	Nebraska	1.4
Alabama	4.4	North Dakota	1.4
Georgia	4.3	New Mexico	1.7
Alaska	4.2	South Dakota	1.7

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

IV.VII Apprenticeship Program Sponsor Findings

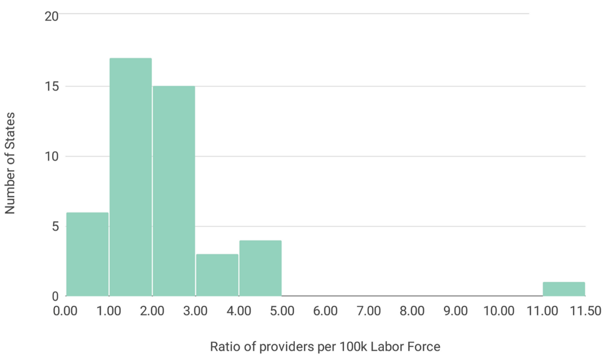
Key takeaway: The Northeast is most served by Registered Apprenticeships. Massachusetts has the highest absolute number of Registered Apprenticeships and the highest ratio of Registered Apprenticeships to 100k people in both the labor force and unemployed populations.

Table 14: Breakdown of Registered Apprenticeships by region

RAPIDS	# of Orgs	Per 100k Unemployed	Per 100k Labor Force
Midwest	701	55.2	2.0
Northeast	835	77.2	2.8
South	797	37.5	1.3
West	551	36.0	1.4

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Figure 8: Distribution of Registered Apprenticeships by state



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

The majority of states have a ratio of fewer than 3 Registered Apprenticeships to 100k in their labor force (Figure 8). Massachusetts is the most-served state with more than double the ratio of providers to 100k people in the labor force (11.3) and unemployed population (372.7), than the state with the next highest ratio—Rhode Island (4.9 and 138.1, respectively).

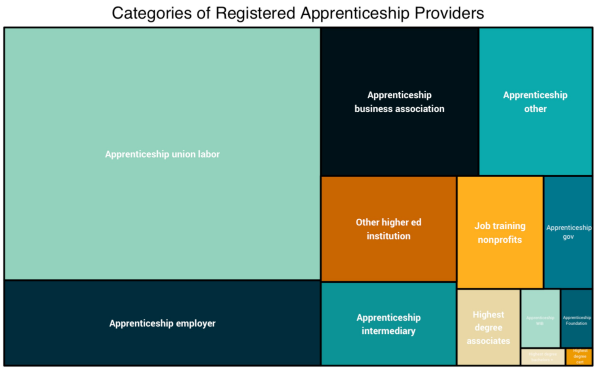
Table 15: Top five and bottom five states in terms of the number of Registered Apprenticeships in each state

Top five states and territories	# of Registered Apprenticeship sponsors	Bottom five states and territories	# of Registered Apprenticeship sponsors
Massachusetts	433	South Dakota	4
California	264	Connecticut	8
New York	140	Wyoming	8
Illinois	133	North Dakota	10
Texas	131	Mississippi	13

Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

While adjusting for population helps us obtain a more complete picture of how well a state or territory is served by Registered Apprenticeships, the absolute number can also give us an indication of training choice and opportunity for workers and learners. For example, Massachusetts' highest absolute number of Registered Apprenticeships is one and a half times that of California, the state with the second most. On the other hand, South Dakota only has four Registered Apprenticeships, and Connecticut, a Massachusetts neighbor, only has eight.

Figure 9: Breakdown of Registered Apprenticeship categories for those organizations that have sufficient data for categorization [25]



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

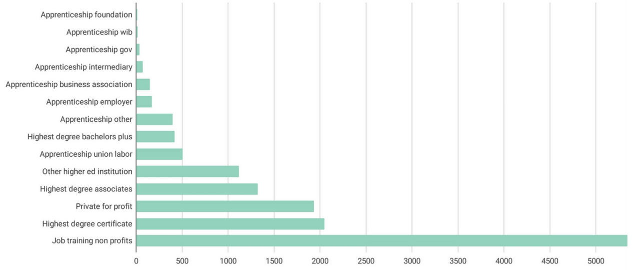
Most Registered Apprenticeship sponsors that we have information on are unions, employers, and business associations (Figure 9). Several sponsors are higher education institutions, and a few are job training nonprofits and WIOA-eligible providers.

IV.VIII Brief Category Findings

Our 14 categories are not mutually exclusive, as a very small number of providers are classified in more than one category. About 20% of providers are uncategorized; this is largely due to limited and incomplete data from the source datasets, as described in prior sections.

Of the providers who had enough information to be allocated a category (80% of the dataset), about 40% are job training nonprofits (Figure 10). A little over a third are various types of institutions of higher education, and the remainder are for-profit providers and apprenticeship providers (Figure 10). This breakdown differs from a dataset-type-informed analysis in terms of the proportions of each organizational category.

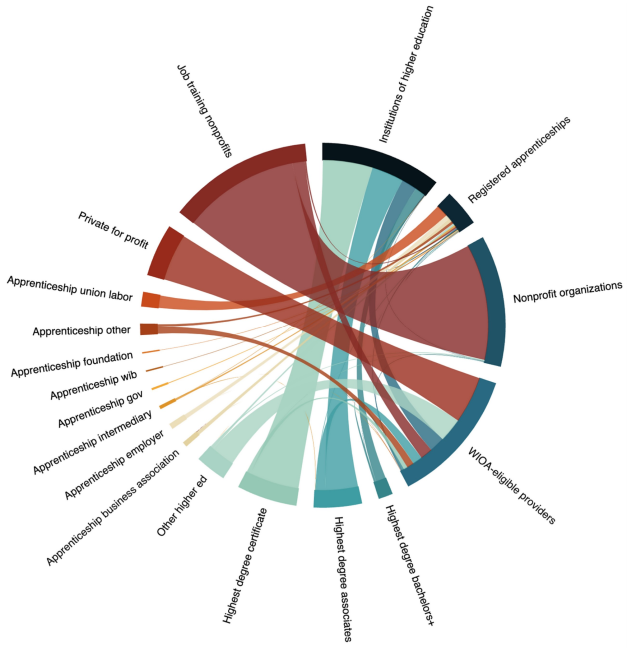
Figure 10: Breakdown of organizations by category



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

The *categories* are not hierarchically derivative from the *types* but rather are another way of conceptualizing the training provider system. When we put these two approaches in conversation with one another (Figure 11) we see that there are wide-ranging disparities in the interactions across types and categories, as well as some expected and more pronounced interactions. The presence of such diverse linkages further suggests that we need to explore the workforce development training provider system as one system and not siloed sectors.

Figure 11: Breakdown of organizations by category and type



Source: Project on Workforce at Harvard University. (2023). Workforce Almanac (Version 1.0). Retrieved from http://www.workforcealmanac.com/.

Conclusion

Even as legislative and funding priorities attempt to shift workforce training in the U.S. to a more structured system, studying the system remains fragmented. The absence of a comprehensive view of different types of providers and their geographic distribution in the U.S. has prevented researchers and practitioners from developing solutions that more equitably serve American workers seeking training and retraining opportunities.

The Workforce Almanac is an effort to examine this complex system in a more comprehensive way and to offer open-access data for practitioners and researchers to use in ways that improve workforce training pathways for workers and learners.

The initial analysis we share in this working paper focuses on the presence and types of training providers in the U.S. and offers a first look at how this first iteration of the Workforce Almanac can be used. We hope and expect that the Workforce Almanac will support practitioners, policymakers, philanthropies, training providers, and researchers in their efforts to make the workforce development sector a driving force for shared economic progress.

Acknowledgments

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About the Project on Workforce at Harvard

The [Project on Workforce](#) is an interdisciplinary, collaborative project between the Harvard Kennedy School's Malcolm Wiener Center for Social Policy, the Harvard Business School's Managing the Future of Work Project, and the Harvard Graduate School of Education. The Project produces and catalyzes basic and applied research at the intersection of education and labor markets for leaders in business, education, and policy. The Project's research aims to help shape a postsecondary system of the future that creates more and better pathways to economic mobility and forges smoother transitions between education and careers.

About the Workforce Almanac

The Project on Workforce's [Workforce Almanac](#) is a multiyear research effort to build a comprehensive new national data source and evidence base about the workforce development sector, including job training organizations and programs.

The views expressed in this report are the sole responsibility of the authors and are not meant to represent the views of Harvard University, the Harvard Kennedy School, or the Harvard Graduate School of Education.

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[22] Some state lists (ETPLs) contain more providers than are reported to the Department of Labor's TPR.

[23] Registered Apprenticeship data from Minnesota, Oregon, Vermont, Washington State, and the District of Columbia were not fully represented in the RAPIDS data by the time we extracted this dataset, so the makeup of this type of training organization in this Figure should be read with caution. For more information on the representation of state data in the version of the RAPIDS data available at the time we built the Almanac, see: Department of Labor – Employment and Training Administration. “Registered Apprenticeship National Results Fiscal Year 2020.” http://www.dol.gov/agencies/eta/apprenticeship/about/statistics/2020.

[24] 30.4% of the 5,310 WIOA-Eligible training providers are uncategorized, including 1,215 labeled by TPR as "Other" and 399 labeled by TPR as "Public."

[25] 57.6% of the 2,889 Registered Apprenticeships are uncategorized, including 1,657 labeled by RAPIDS as "N/A" or blank, and 8 labeled by RAPIDS as "None."