TRAINING AND EMPLOYMENT NOTICE	NO. 10-09
	DATE September 21, 2009

TO: STATE WORKFORCE AGENCIES
STATE WORKFORCE LIAISONS
STATE APPRENTICESHIP AGENCY DIRECTORS
STATE WORKFORCE INVESTMENT BOARDS AND STAFF
LOCAL WORKFORCE INVESTMENT BOARDS AND STAFF
OFFICE OF APPRENTICESHIP FIELD TECHNICIANS
OFFICE OF APPRENTICESHIP STATE AND REGIONAL DIRECTORS

FROM: JANE OATES /s/
Assistant Secretary
Employment and Training Administration

KATHLEEN MARTINEZ /s/
Assistant Secretary
Office of Disability Employment Policy

SUBJECT: Toolkit and White Paper on Improving Transition Outcomes of Youth with Disabilities through Apprenticeship

1. Purpose. To disseminate a white paper and toolkit which focus on expanding apprenticeship opportunities for youth and young adults with disabilities.

2. Background. Developing the talents, skills and capabilities of the workforce has always played an important part in our nation's economic strength. The 21st century economic landscape is rapidly changing as technology and globalization alter the nature of work and the skills and training needed by workers to remain competitive. Ninety percent of the fastest growing jobs in the United States today require post-secondary education. This trend, coupled with the rapidly growing rate of baby boomer retirements, heightens the importance of preparing youth for the skills employers need.

This issue has significant impact on the economic development of communities, states, regional economies, and ultimately that of our nation. The workforce investment system plays a vital role in addressing the need to develop talent pools of young workers who serve as a “youth supply pipeline,” which helps to drive economic growth.

More than 950 occupations across all industry clusters nationwide are recognized through Registered Apprenticeship programs, and new occupations are regularly added as employer needs evolve to meet new economic realities. These occupations span a broad range of industry clusters and demonstrate the power of the Registered Apprenticeship model to build a 21st century workforce.

In the United States today, 250,000 separate employers offer Registered Apprenticeship employment and training to almost 450,000 apprentices in such industries as construction, manufacturing, transportation, telecommunications, information technology, biotechnology, retail, health care, the military, utilities, security, and the public sector. By providing on-the-job training, related instruction, and guaranteed wage increases, employers and labor management organizations that sponsor apprentices provide incentives that can help them to attract and retain more highly qualified employees and improve productivity and services. Regions that adopt robust Registered Apprenticeship programs in the context of economic development strategies contribute to the pipeline of skilled workers and flexible career pathways to support current and future workforce demands.

Over the past decade through the School-to-Work Opportunities Act and the Individuals with Disabilities Education Act, the Federal Government has stressed the importance of improving transition services nationally for youth with disabilities, and has assumed a strategic role in supporting state and local efforts to improve transition services through the identification of promising practices, delivery strategies, and policy development. Moreover, the 2006 reauthorization of the Carl D. Perkins Vocational and Technical Education Act has reenergized efforts to promote the use of career and technical education as a strategy for learning in the context of improved academic achievement for all students. In addition, the Workforce Investment Act of 1998 and the No Child Left Behind Act of 2001 have resulted in reform efforts that focus on high academic and occupational standards; promote the use of state and local standards-based accountability systems; call for broad-based partnerships between schools, employers, post-secondary institutions, and families; support full participation and equal access to the general education curriculum; and emphasize research-based teaching methods.

The Department of Labor released the first official data on the employment status of people with disabilities on February 6, 2009. In January 2009, the employment rate for people with disabilities was 23.1 percent. The unemployment rate for those with disabilities was 13.2 percent (http://www.bls.gov./cps/cpsdisability.htm).[1] The National Longitudinal Transition Study (NLTS)-2 indicates that employment rates vary considerably across disability categories for students with disabilities who were enrolled in special education. Youth with learning disabilities, emotional disturbances, other health impairments, or speech impairments are the most likely to be employed in a 1-year period (50 percent to 60 percent). In contrast, youth with significant disabilities have significantly lower employment rates, e.g., 15 percent for youth with autism, 25 percent for youth with multiple disabilities, deaf-blindness, or orthopedic impairments, and 33 percent for youth with mental retardation or visual impairments.

A number of recent studies examining career and technical education programs and the use of structured work-based learning approaches suggest that such approaches are an important aspect of and contribute to better outcomes in-school, i.e., student achievement; knowledge assimilation and retention; motivation and post-school outcomes, i.e., educational continuation and employment success (American Youth Policy Forum, 2003; National Association of State Directors of Career Technical Education, 2003). Moreover, when youth with disabilities take career and technical education in their last year of high school or concentrate in a career and technical education content area, research indicates that they have higher rates of high school

1 After several years of research and testing, the Department of Labor's Office of Disability Employment Policy (ODEP) sponsored the addition of new disability questions to the Current Population Survey (CPS) to generate data to gauge the employment status of people with disabilities. These data provide, for the first time, an official measure to the labor force situation for people with disabilities.

graduation, competitive employment, post-secondary education attendance, and advances in earnings or wages (Scholl & Mooney, 2003; Benz, Lindstrom, & Yovanoff, 2000; Cobb, et al., 1999; Eisenman, 2000; Harvey, 2002; Luecking & Fabian, 2000; Phelps, 1998).

Although limited research has been conducted on the impact of apprenticeship programming on post-secondary and employment outcomes for people with disabilities, an independent study conducted by the Center on Education and Work at the University of Wisconsin for the Wisconsin Governor's Work-Based Learning Board on graduates' experiences with the Wisconsin Youth Apprenticeship Program, suggests a positive link between apprenticeship and employment earnings, retention, and enrollment in post-secondary education (Mickelson, Pereira, Fillingame, 2005). In addition, an earlier study on this same program identified the following factors as enhancing the success of all youth apprentices with and without disabilities:

1. High levels of program organization and coordination;
2. Meaningful and consistent communication between stakeholders;
3. A good "fit" between a young persons' abilities and their chosen youth apprenticeship career field;
4. A quality worksite placement (e.g., adequate rotation through competencies, presence of an experienced mentor); and
5. Rigorous and engaging classroom instruction that integrated technical and academic competencies.

While these factors were central to all youth apprenticeship experiences, they were found to be particularly critical in the apprenticeship experiences of youth with disabilities (Scholl & Mooney, 2003).

Although Federal legislation mandates that youth and young adults with disabilities have equal opportunity to benefit from the full range of career/technical educational programs and services available to their peers without disabilities, research conducted on this issue by the Office of Disability Employment Policy (ODEP) in 2007 revealed that youth and young adults with disabilities rarely participate in apprenticeship programs. To capitalize on the potential that apprenticeship holds for improving employment opportunity and self-sufficiency for youth and young adults with disabilities, and increase the capacity of the Workforce Investment Act system to better address the needs of these young people, ODEP and the Office of Apprenticeship (OA) are collaborating to distribute two technical assistance documents developed as a result of the aforementioned research.

The first attachment, a white paper entitled, *Improving Transition Outcomes of Youth with Disabilities by Increasing Access to Apprenticeship Opportunities*, is geared to policymakers. This paper provides an overview of the Registered Apprenticeship system in the United States, explores current trends in apprenticeship, and examines opportunities for youth, including those with disabilities. In addition, it identifies obstacles to expanding participation of youth with disabilities in apprenticeship programs and provides strategies for addressing these obstacles.

The second attachment, a technical assistance document, *Youth with Disabilities Entering the Workplace Through Apprenticeship*, is a toolkit intended to provide service providers with useful

information about apprenticeship as an employment strategy for youth and young adults with disabilities. It is organized around six topical areas:

1. Understanding Apprenticeship Basics;
2. Preparing Youth and Young Adults for Apprenticeship Programs;
3. Increasing Participation of Young Adults with Disabilities in Apprenticeship Programs;
4. Establishing New Apprenticeship Programs;
5. What Apprenticeship Employers Need to Know About Working with Young Adults with Disabilities; and
6. Looking to Future Opportunities in Apprenticeship.

3. Next Steps. The Department of Labor will continue to develop, and disseminate and publicize information to promote the inclusion of youth with disabilities in Registered Apprenticeship programs.

4. Action Requested. States are requested to disseminate this information to local areas as well as to interested and potentially interested stakeholders.

5. Inquiries. Questions on this Training and Employment Notice (TEN) should be directed to Rachel Dorman of the Office of Disability Employment Policy at (202) 693-7945, or dorman.rachel@dol.gov and Franchella Kendall of the Office of Apprenticeship at (202) 693-3798 or kendall.franchella@dol.gov.

6. Attachments.

A. Improving Transition Outcomes of Youth with Disabilities by Increasing Access to Apprenticeship Opportunities

B. Youth with Disabilities Entering the Workplace Through Apprenticeship

Improving Transition Outcomes of Youth with Disabilities by Increasing Access to Apprenticeship Opportunities

ODEP Issue Papers Project
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The findings and conclusions in this report
are those of the authors and do not necessarily represent the views, official opinion or policy of the U.S. Department of Labor.

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Executive Summary

I. Introduction

The transition from adolescence to adulthood is an uneven path and, often, a rocky road for youth ages 14 – 25. Many youth make the transition successfully – completing their education and moving towards a career path. Unfortunately, for young people with disabilities, the challenges are greater and the outcomes sometimes less positive. Youth with disabilities are half as likely as their peers to participate in post-secondary education. By the time they reach adulthood their prospects for employment are much worse than their non-disabled peers. According to the American Community Survey for 2007, the employment rate of working aged people with disabilities was 36.9 percent compared to 79.7 percent for people without disabilities, a gap of almost 42 percentage points.

The Americans with Disabilities Act (ADA), enacted over 15 years ago, was intended to address the inequities that people with disabilities face in their daily lives and in the workplace. Yet, employers continue to express concern about the need to provide employees with "reasonable accommodations" and myths abound about the cost of accommodations and the unsuitability of people with disabilities in the workplace. In fact, studies have shown that the average cost of workplace accommodations in 2006 was $600 or less and the vast majority of workers with disabilities do not require accommodations.

In recognition of the difficulties individuals with disabilities face in finding employment, the Office of Disability Employment Policy (ODEP) was established within the U.S. Department of Labor (DOL) in 2000. ODEP is charged with advising the Secretary of Labor and assisting Federal agencies in the development of policies and practices that increase employment opportunities and the recruitment, retention, and promotion of people with disabilities. In keeping with this mission, ODEP has commissioned this issue paper to explore apprenticeship opportunities for young people with disabilities.

This paper provides an overview of the apprenticeship system in the United States, explores current trends in apprenticeship, examines opportunities specifically for youth, particularly youth with disabilities. In addition it identifies obstacles to expanding

participation of youth with disabilities and provides strategies for addressing these obstacles. The methodology used to develop this paper involved: 1) extensive literature research; 2) consultation and interviews with Federal and state apprenticeship representatives; and 3) interviews with others who are familiar with apprenticeship, operate apprenticeship programs, or represent youth programs that potentially feed into registered apprenticeship.

Apprenticeship has a long and rich history of preparing workers for skilled jobs to support the economy. The Fitzgerald Act of 1937, also referred to as the National Apprenticeship Act, officially authorized and formalized a national apprenticeship system. This concise piece of legislation has remained unchanged for over 80 years. Over time, the specifications and administration of apprenticeship have been shaped through regulations issued by DOL. Regulations governing apprenticeship programs are found at title 29, part 29.5 of the Code of Federal Regulations (CFR). The current regulations were published in October of 2008, with an effective date of December 29, 2008.

The Federal regulations contain the definitions for apprenticeship and apprenticeable occupations, and the standards for establishing and registering apprenticeship programs. Apprenticeship recognition is limited to skilled occupations and trades that meet the basic criteria as laid out in the regulations. It is important to note that apprenticeship is first and foremost a job. It allows the participant to obtain job skills while earning an income, involves wage progression over time, and provides a widely recognized certificate of completion and proficiency. These core characteristics make apprenticeship a highly desirable form of training for many entry-level workers. There are currently 950 apprenticeable occupations and new occupations are continually added.

Training programs must meet basic standards to be registered by a Federal or state apprenticeship agency. Currently, there are 23 different standards for recognition of apprenticeship programs that relate to:

- Types of occupations and terms of training (e.g. duration);
- Methods of training and the contents of the training agreement between the apprentice and program sponsor;

- Employment and supervision of apprentices, including requirements for wage progression;
- Registration, record maintenance, reporting and certification; and
- Compliance with equal employment opportunity requirements.

A training program must include: 1) supervised, structured, on-the-job training by a qualified journey-level worker, and 2) outside related instruction, which is generally classroom based. Federal regulations recommend at least 144 hours of related instruction per year. Apprenticeship programs typically range from one year to up to 6 years in length. A training program may be completed based on time (e.g. 2000 hours of work experience), based on demonstrating specific competencies, or through a combination of time and demonstrated competencies.

DOL's Office of Apprenticeship Services (OA) administers the national apprenticeship system, with staff located at the national, regional and state levels. The OA promotes apprenticeship, recognizes occupations, registers programs, oversees compliance with Federal regulations, and maintains an apprenticeship database system. While the Fitzgerald Act gave the Secretary of Labor authority over apprenticeship programs, the regulations governing apprenticeship provide for recognition of state agencies to register and administer apprenticeship programs. Twenty-five states plus the District of Columbia and Puerto Rico are recognized by DOL for purposes of registering apprenticeship programs and apprentices.

II. Status of Apprenticeship

All programs and apprentices, regardless of whether the registration is completed by the state or by the Federal agency, are recorded and tracked in the national apprenticeship system, the Registered Apprenticeship Partners Information Data System (RAPIDS). This database is maintained by the OA, and is the source of all of the numeric information contained in this report. RAPIDS records the information for registered apprenticeship programs and apprentices for all states, including the states and territories that are recognized for apprenticeship purposes. According to the OA, as of September 30, 2007, there were 458,108 active apprentices. While registered apprenticeships appear in nearly all industries, most are in the construction trades, the

historical basis of apprenticeship. Figure 1 shows the top 25 occupations with the most registered apprentices along with the number of active programs as of September 30, 2007. The one notable exception outside the building and construction trades is the number two occupation, Heavy Truck Driver, which cuts across several industries, including construction. This occupation was not among the top 25 occupations until 2006, when two large national employers created apprenticeship programs and registered sizable numbers of apprentices. These employers are United Parcel Service (UPS) and Werner Trucking.

Figure 1
Top 25 Apprenticeship Occupations Ranked by Total, As of September 30, 2007

Rank	Occupation	Total Active Enrolled	Number of Active Programs	Average Enrollment/ Program
1	Electrician	45,609	3,209	14.2
2	Heavy Truck Driver	37,805	39	969.4
3	Carpenter	33,027	446	74.1
4	Plumber	18,578	2,644	7.0
5	Construction Craft Laborers	9,836	94	104.6
6	Pipe Fitter (construction)	9,542	722	13.2
7	Sheet Metal Worker	8,754	518	16.9
8	Structural Steel Worker	8,659	131	66.1
9	Roofer	5,943	139	42.8
10	Elevator Constructor	5,746	62	92.7
11	Drywall Installers	5,541	44	125.9
12	Sprinkler Fitter	5,433	124	43.8
13	Operating Engineer	4,837	131	36.9
14	Painter (construction)	4,795	248	19.3
15	Boilermaker	4,089	32	127.8
16	Bricklayer (construction)	3,729	194	19.2
17	Millwright	3,185	381	8.4
18	Heating/Air Conditioner-Installer	3,099	601	5.2

Rank	Occupation	Total Active Enrolled	Number of Active Programs	Average Enrollment/ Program
19	Powerline Maintainer	3,087	297	10.4
20	Powerline Installer & Repairer	2,886	92	31.4
21	Insulation Worker	2,328	101	23.0
22	Correction Officer	2,290	58	39.5
23	Child Care Development Specialists	2,282	971	2.4
24	Cook (hospitality & cruise ship)*	2,259	1	2,259.0
25	Cement Mason	2,240	127	17.6

Source: RAPIDS
* Note that a related occupation Cook (restaurant and hotel) also has 1,107 apprentices in 316 active programs.

History and tradition are not the sole reasons why apprenticeship remains strongest in the building and construction trades. Federal laws provide incentives for hiring and training apprentices in the building and construction trades. The most well-known is the Davis-Bacon Act of 1931, which requires any Federal contract over $2,000 for the construction, alteration, or repair of public buildings or public works pay workers the prevailing wage in the local area. One of the exceptions to the Davis-Bacon Act pertains to apprentices and trainees. They may be paid less than the prevailing wage if they are in a program approved by DOL. Instead, they would receive the wages that are set out in the apprenticeship training plan and agreement. It should be noted that to date, DOL's OA recognizes only apprentices for the prevailing wage exception; not trainees. Over the years, the prevailing wage provisions have been added to about 60 other statutes related to construction. In addition, over half of the states have their own prevailing wage laws that apply to state-funded construction projects, although the dollar thresholds are generally larger than the Federal statute.

III. Youth in Apprenticeship

Apprenticeship is predominantly a program for training adult workers. The average age for an apprentice is 27 years old. However, there are significant numbers of

older youth who participate in apprenticeship programs. Age data for youth is broken down into two ranges: 16-18 and 19-23 years old. Relatively few youth age 18 and under participate in apprenticeship programs. One reason for this is that most apprenticeship programs require applicants to possess a high school diploma. Additionally, many apprenticeship programs are in occupations that are considered hazardous under Federal and state child labor laws, and even though there are exceptions for apprenticeship, employers in these occupations tend not to hire anyone under the age of 18.

Figure 2 shows participation of youth ages 16 to 23 in apprenticeship programs across 12 industry clusters. The data is broken down by age ranges and includes new registrants, active apprenticeships, and completions for Fiscal Year (FY) 2006. It should be noted that these figures represent activity during FY 2006. Thus, the columns "Active Youth," "New Registrants," and "Completed" should not be compared to one another. Apprenticeship programs are generally longer than one year, so the "Active Youth" and "New Registrants" would not be expected to complete their training within the same year.

Figure 2
Youth Apprentices by Industry

Industry Cluster	Active Youth 16 -18	Active Youth 19 - 23	New registrants 16 -18	New registrants 19 - 23	Completed 16-18	Completed 19-23
Advanced Manufacturing	933	3,235	197	939	48	198
Automotive	161	230	41	72	15	40
Biotechnology	5	32	2	12	0	3
Construction	9,120	53,350	3,692	21,638	877	6,271
Energy	75	1,227	35	594	6	153
Financial Services	19	37	8	29	1	2
Geospatial Technology	48	145	23	90	2	6
Healthcare	69	141	38	95	4	4
Hospitality	197	701	73	228	17	50
Information Technology	56	56	1	26	0	4
Retail Trade	216	53	33	15	9	1

Industry Cluster	Active Youth 16 -18	Active Youth 19 - 23	New registrants 16 -18	New registrants 19 - 23	Completed 16-18	Completed 19-23
Transportation	49	1,035	8	747	2	14
Total	**11,099**	**62,224**	**4,231**	**25,600**	**997**	**7.191**

Source: RAPIDS

The percentage of youth that participate in apprenticeship programs varies by occupation. Figure 3 contains data on the participation of youth ages 16 to 23 in apprenticeships by occupation in FY 2007.

Figure 3
Youth Apprentices by Occupation

Occupational Title	Number of Youth 16 -23	Percent of all apprentices
Electrician	22,714	50
Bricklayer (construction)	1,751	47
Sheet Metal Worker	4,083	47
Carpenter	15,602	47
Pipe Fitter (construction)	4,395	46
Pipe Fitter (sprinkler systems)	2,514	46
Painter (construction)	2,091	44
Plumber	8,191	44
Structural Steel Worker	3,679	42
Operating Engineer	1,963	41
Construction Craft Laborer	3,991	41
Dry Wall Applicator	2,205	40
Millwright	1,265	40
Line Maintainer	1,219	39
Roofer	2,325	39
Line Erector	1,111	38
Boilermaker	1,533	37
Heating & Air Conditioning	1,154	37

Occupational Title	Number of Youth 16 -23	Percent of all apprentices
Elevator Constructor	1,382	24
Truck Driver, Heavy	1,194	3

Source: RAPIDS

School and non-school-based youth programs can serve as feeder programs for youth to enter registered apprenticeship programs. Some of these programs have formal linkages with apprenticeship programs while others provide training in the major apprenticeable occupations, though they may not have formal ties to apprenticeship. Youth apprenticeship and school-to-apprenticeship programs tend to be secondary-school based while pre-apprenticeship programs tend to operate outside the public secondary school system. School-to-apprenticeship and youth apprenticeship programs are, as their names suggest, oriented to youth, generally under the age of 21. Pre-apprenticeship programs may have both youth and adult participants.

Youth apprenticeship programs largely seem to be clustered in two states: Georgia and Wisconsin. Wisconsin in particular has a long history with apprenticeship. Pre-apprenticeship programs are spread among a number of states, but there is a noticeable concentration of these programs in the states of Washington, California, Ohio, and Oregon. The largest concentration of school-to-apprenticeship programs is found in Ohio, which is also one of the states with the largest number of active apprentices.

Two programs that provide education and training in the top apprenticeship occupations are the Job Corps and YouthBuild. Both have the potential to serve as feeder programs into registered apprenticeship. While YouthBuild focuses on the building and construction trades, Job Corps provides more variety in course offerings, ranging from culinary arts to automotive technology. Job Corps and YouthBuild are highlighted as feeder programs for youth because they are nationally available programs, provide education and training to significant numbers of youth, and focus on occupations that have the most registered apprentices.

IV. Apprenticeship Initiatives

ETA has launched multiple initiatives in its attempts to expand apprenticeship and to better integrate apprenticeship within the workforce development system.

- In August of 2004, the OA Administrator formally approved the first "Certificate of Training" interim credential. This credential is defined as "a credential issued by the registration agency [e.g. Federal or state] upon request of the appropriate sponsor as certification of competency attainment by an apprentice." Career lattice apprenticeship occupations offer individuals an opportunity to move laterally or upward within an industry. The first approved career lattice apprenticeship occupation was in the healthcare industry, but more have been added.
- To promote integration with the workforce system, ETA awards a significant amount of funds under its discretionary grant programs. A few of these programs have direct connections to apprenticeship, while for others apprenticeship may be incorporated into the grant project.
- Since early FY 2007, ETA has been promoting the integration of apprenticeship within the workforce system, including the One-Stop Career Centers. ETA has also hosted webinars on the subject as a way to educate and promote the integration of apprenticeship within the workforce system.
- Each year, the OA provides its staff with written program guidance establishing goals and objectives for the fiscal year. For FY 2008, the first priority task listed was the integration of apprenticeship within the public workforce investment system.
- For the first time in 30 years, DOL issued revisions to the apprenticeship regulations on October 29, 2008. The changes are intended to update the apprenticeship system so that it is in tune with the economy and is responsive to workforce challenges. Many of the changes formalize trends that have been incorporated into the apprenticeship system in the last decade.

V. Obstacles and Opportunities

There are a number of obstacles to expanding opportunities for youth with disabilities in apprenticeship. Among the obstacles are:

- Apprenticeship is mostly an adult program, limiting opportunities for all youth to enter registered apprenticeship programs.
- While most opportunities are in the construction trades, little effort is directed to encouraging youth with disabilities to consider careers in construction or to overcome the perception on the part of construction employers that youth with disabilities are not able to perform the job.
- Apprenticeship is not widely understood. Organizations that typically work with individuals with disabilities are likely unaware of the potential that exists for creating apprenticeship programs with employers and supporting individuals in apprenticeship programs.
- Apprenticeship programs can be costly to operate and, outside of the building and construction trades, the financial incentives for employers to develop and operate apprenticeship programs are limited or nonexistent.
- While the Federal and state agencies are the registrant for apprenticeship programs, individual employers make the decisions around hiring.
- Apprenticeships outside the construction trades do offer new opportunities for all youth, including youth with disabilities; however, the numbers of such programs and apprentices are fairly small when compared to the building and construction trades.
- There is no identifiable system of professional development for the on-the-job instructors. Thus, there are no apparent avenues for providing training in working with youth and particularly youth with disabilities.

For each of these obstacles there are opportunities to address the issues. ODEP in collaboration with other Federal agencies (particularly the OA, Job Corps, ETA's Youth Office, and the Department of Education's Vocational Rehabilitative Services) can pursue a strategic agenda to promote apprenticeship for youth with disabilities. ODEP can provide substantive technical assistance and support to other agencies. Carefully

constructed and targeted strategies could produce substantive results. Following are some thoughts on strategies.

Any efforts around registered apprenticeship will need to be jointly developed and closely coordinated with OA. For example, OA maintains a list of all current program sponsors that ODEP might tap into for outreach to employers. ODEP should consider working with OA to identify a few of the emerging, in demand occupations (such as the culinary arts, pharmacy, and medical fields) that offer career lattice opportunities for both youth and adults with disabilities. ODEP's relationships with CVS Caremark and the American Culinary Federation are two examples of existing connections with numerous expansion opportunities. In addition, by working with OA, it might be possible to partner with a large, multi-state healthcare employer or association that is interested in establishing apprenticeship programs in high demand occupations with a shortage of workers.

This does not mean that the traditional apprenticeship occupations should be ignored. There are opportunities among pre-apprenticeship, school-to-apprenticeship, and youth apprenticeship programs that may include youth with disabilities. Again, the approach should be strategic and targeted to specific states with a large number of programs, or to organizations that operate in a number of different states, such as the Home Builders Institute (HBI). Expanding opportunities in apprenticeship will require that all stakeholders involved come together and work collaboratively. This should be a comfortable role for ODEP as it is within its mission and methods of operation.

Service providers that target individuals with disabilities, such as Vocational Rehabilitation, and that focus on youth and youth with disabilities, such as YouthBuild and Job Corps, are potentially strong feeder programs into apprenticeship. However, YouthBuild and Job Corps will need to strengthen their linkages with registered apprenticeship to make these programs more viable options for youth to directly enter registered apprenticeship. ODEP should also work with the Federal staff in DOL to secure better data on outcomes for youth with disabilities that participate in YouthBuild and Job Corps programs. Such data is essential for ODEP in developing policies and strategies.

Moreover, registered apprenticeship is not widely understood by many service providers, particularly those that work with individuals with disabilities. A toolkit of materials concerning registered apprenticeship could very useful for this audience. ODEP should consider working with appropriate Federal agencies to disseminate the toolkit.

Finally, there needs to be an educational campaign that promotes understanding of apprenticeship among youth, parents, and service providers, as well as understanding among apprenticeship employers around individuals with disabilities. Targeted mailings, presentations, and the development of materials appropriate to the audience are recommended. Pilot efforts that involve states and local service providers (specific to youth or disability) can yield data and examples that can inform continuing initiatives around apprenticeship and individuals with disabilities. These pilot programs need not be large-scale or expensive; they should merely demonstrate the viability of apprenticeship for individuals with disabilities.

Issue Paper on Increasing Access to Apprenticeship Opportunities

I. Introduction

The transition from adolescence to adulthood is an uneven path and often rocky road for youth ages 14 – 25. Many youth make the transition successfully by completing their education and moving towards a career path. Unfortunately, for young people with disabilities, the challenges are greater and the outcomes less positive. Youth with disabilities are half as likely as their peers to participate in post-secondary education. By the time they reach adulthood, their prospects for employment are much worse than their non-disabled peers. The unemployment rate for people with disabilities is more than double the national unemployment rate and a significant percentage of individuals with disabilities are underemployed.

According to the 2007 American Community Survey (ACS), 12.8 percent of the civilian non-institutionalized population ages 21 to 64 years in the United States reported a disability, more than 22 million people. There is a wide range of disabilities represented among this population, but individuals with learning disabilities are most prevalent. Data on the school age population is illustrative. According to a National Longitudinal Transition study funded by the National Center on Education Statistics, almost two-thirds of students receiving special education are classified as having a learning disability (62 percent). Other common disabilities include emotional disturbance, health impairments, physical and speech impairments, and mental retardation.

The Americans with Disabilities Act (ADA), enacted over 15 years ago, was intended to address the inequities that people with disabilities face throughout their daily lives and within the workplace. However, continued reluctance by employers to provide employees with “reasonable accommodations” is fueled by myths surrounding the cost of accommodations and the unsuitability of people with disabilities to enter the workplace. In truth, studies have revealed that the average cost of workplace accommodations in 2006 was under $600 for an individual with a disability, and the vast majority of workers with disabilities do not require any accommodations.

In recognition of the difficulties individuals with disabilities face in finding employment, the Office of Disability Employment Policy (ODEP) was established within the U.S. Department of Labor (DOL) in 2000. ODEP is charged with advising the Secretary of Labor and assisting Federal agencies in the development of policies and practices that increase employment opportunities and recruitment, retention, and promotion of people with disabilities. To promote its mission, ODEP has commissioned this issue paper to explore apprenticeship opportunities for young people with disabilities.

The purpose of this work is to: 1) introduce the apprenticeship system as it exists today; 2) explore trends in apprenticeship; 3) examine opportunities for youth, particularly youth with disabilities; 4) identify obstacles to expanding participation of youth with disabilities; and 5) provide strategies for addressing these obstacles. Because formal apprenticeship is not generally well understood, a considerable portion of the paper will be devoted to providing basic information on the formal U.S. apprenticeship system. It is important to understand the apprenticeship system before exploring opportunities and challenges to enhancing participation in the system.

The methodology used to develop this paper involved: 1) extensive research of existing literature; 2) consultation and interviews with Federal and state apprenticeship representatives; and 3) interviews with others who are familiar with apprenticeship, operate apprenticeship programs, or represent youth programs that potentially feed into registered apprenticeship. We would particularly like to acknowledge the substantial assistance we received from the leadership and staff of the Office of Apprenticeship (OA) in the DOL's Employment and Training Administration (ETA). They provided us with background information for the paper and suggested interviewees and individuals for an expert panel that we convened to review this paper.

In developing this paper, we have elected to focus on formal registered apprenticeship programs and those programs that we believe feed most directly into registered apprenticeship. The apprenticeship model combines on-the-job learning with classroom instruction and may be utilized by a variety of occupations. This model is an effective education and training tool for both youth and adults. While there is certainly value in looking at broader apprenticeship-like programs, we believe that it would detract

from our focus on how to increase opportunities for youth in formal apprenticeship programs.

II. Background

A) History and Legal Framework

Apprenticeship has a long and rich history of preparing workers for skilled jobs in the economy. Apprenticeship legislation in the United States dates back to 1911 when Wisconsin passed a law placing authority for apprenticeship under the jurisdiction of an industrial commission. It was the first state to do so. Previously, Wisconsin had passed legislation requiring apprentices to attend classroom instruction five hours a week, thus creating an early model combining on-the-job learning, work experience and classroom instruction that would become the basis for formal apprenticeship in the U.S.

The Fitzgerald Act of 1937, also referred to as the National Apprenticeship Act, officially authorized and formalized a national apprenticeship system. It was the result of a concerted effort of national employer and labor organizations, educators, and government officials. Construction industry leaders were in the forefront of this effort, thereby establishing a strong apprenticeship base within the construction industry. The law authorizes the Secretary of Labor to:

> Formulate and promote the furtherance of labor standards necessary to safeguard the welfare of apprentices, to extend the application of such standards by encouraging the inclusion thereof in contracts of apprenticeship, to bring together employers and labor for the formulation of programs of apprenticeship, to cooperate with State agencies engaged in the formulation and promotion of standards of apprenticeship, and to cooperate with the National Youth Administration and with the Office of Education of the Department of Interior...

This straightforward piece of legislation (less than a page in length) has remained unchanged for over 80 years. The specifications and administration of apprenticeship have been shaped through regulations issued by DOL. One major stipulation in 1937 was the formation of an office within DOL charged with the administration of the Federal-state apprenticeship system. The OA (formerly Bureau of Apprenticeship and Training) is located within ETA and its staff works at the national, regional and state levels to

promote and regulate apprenticeship within the U.S. In addition, certain states are directly involved in apprenticeship.

The Fitzgerald Act also authorized the formation of a national advisory committee for apprenticeship including representatives of employers, labor, educators, and other executive agencies. This national advisory group, now called the Advisory Committee on Apprenticeship, has operated continuously since the 1930s. The current Committee has 30 members representing employers, labor and the public, and all have been appointed by the Secretary of Labor for one or two year terms.

Regulations governing registration of apprenticeship programs are found at Title 29 Code of Federal Regulations (CFR) part 29. A final rule amending the regulations was published on October 29, 2008, with an effective date of December 29, 2008. As outlined:

> (b) The purpose of this part is to set forth labor standards to safeguard the welfare of apprentices, promote apprenticeship opportunities, and to extend the application of such standards by prescribing policies and procedures concerning the registration, for certain Federal purposes, of acceptable apprenticeship programs with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship. These labor standards, policies and procedures cover the registration, cancellation and deregistration of apprenticeship programs and of apprenticeship agreements; the recognition of a State agency as an authorized agency for registering apprenticeship programs for certain Federal purposes; and matters relating thereto.

B) Definitions of Apprenticeship and the Requirements for Registering an Apprenticeship Program

The Federal regulations contain the definitions for apprenticeship and apprenticeable occupations, and the standards for establishing and registering apprenticeship programs. Apprenticeship recognition is limited to skilled occupations and trades that meet the following basic criteria as laid out in section 29.4 of the regulations:

(a) Involved skills that are customarily learned in a practical way through a structured, systematic program of the on-the-job supervised learning.
(b) Be clearly identified and commonly recognized throughout an industry.

(c) Involved the progressive attainment of manual, mechanical or technical skills and knowledge, which in accordance with the industry standard for the occupation would require completion of at 2,000 hours of on-the-job learning to attain; and
(d) Require related instruction to supplement the on-the-job training.

It is important to note that apprenticeship is first and foremost a job. It allows for: 1) learning job skills while earning an income; 2) wage progression; and 3) a widely recognized certificate of completion and proficiency. These core characteristics make apprenticeship a highly desirable form of training for many entry-level workers. There are currently 950 occupations that are recognized by OA as apprenticeable and new occupations are continually added. States may also approve occupations not formally recognized by OA. A complete list of apprenticeable occupations recognized by OA, organized by industry, can be found in Appendix A.

Training programs must meet basic standards to be registered by a Federal or state apprenticeship agency. There are currently 23 different standards for recognition of apprenticeship programs, as outlined in Section 29.5. These standards relate to:

- Type of occupations and terms of training (e.g. duration);
- The methods of training and the contents of the training agreement between the apprentice and program sponsor;
- Employment and supervision of apprentices, including requirements for wage progression;
- Registration, record maintenance, reporting and certification; and
- Compliance with equal employment opportunity requirements.

A training program must include supervised, structured, on-the-job training by a qualified journey level worker and related instruction outside of the training that is generally classroom-based. Federal regulations recommend at least 144 hours of related instruction per year. The training plan outlines the work processes that the apprentices will receive instruction in, along with an estimation of the amount of time to be spent in each major process. Once a program is recognized, individual apprentices are also registered by the Federal or state agency. Completions and terminations of apprentices are tracked for purposes of issuing certifications of completion. The minimum age to become an apprentice is 16 years old.

The term of apprenticeship is established as part of the registration process for a new program. While there are some programs that require only 2,000 hours of on-the-job learning, apprenticeship programs are generally within the 4,000 to 8,000 hours range (two to four years). Some trades, such as metal patternmaker, require five years of work experience and training along with the related instruction. Federal rules permit the term of apprenticeship to be met through demonstration of skill acquisition or competencies, rather than through completing a set number of on-the-job learning hours. Alternatively, an apprenticeship program can be a "hybrid," which is a combination of the time-based and competency-based requirements.

A common misconception is that apprenticeship programs are "union programs." In fact, employers and employee representatives sponsor apprenticeship programs jointly. Often the "employee representative" is represented by organized labor and labor agreements typically provide for contributions to the training fund that support the apprenticeship program. This is likely the reason that apprenticeship programs have remained strong in occupations represented by organized labor, as the labor agreement is an effective vehicle to cover the costs of the apprenticeship program. However, there are many registered programs in which there is no union involvement. Many of these programs are in the more recent occupations to receive apprenticeship recognition, such as child care and healthcare.

The military also sponsors apprenticeship programs in a number of different occupations. The U.S. Military Apprenticeship Program is a formal apprenticeship training program for active duty Coast Guard, Marine Corps and Navy service members. Apprenticeships are offered in over 100 occupations, providing opportunities for service members to complete an apprenticeship program in an occupation related to their military trade.

C) On-the-Job Training

Formal on-the-job training defines apprenticeship as both a job and a training program. The apprenticeship program, as well as the individual apprentice agreement, details the elements of the work that must be mastered for the individual to have satisfactorily completed an apprenticeship program. The work schedule along with a progressive wage schedule is included in all registered programs. Additionally, most

apprenticeship program registrations include an estimation of the number of hours of work experience that are needed to master the major categories of work processes. A few programs are entirely competency-based, which means that there are no established work experience hours and apprentices complete work processes based on demonstrated competency rather than having completed an established number of work hours. Most programs that are time-based also provide credit based on prior work experience. A "hybrid" training approach, which is gradually becoming more prevalent, is a synthesis of the competency- and time-based approaches.

A journey level worker administers training on-the-job. In the major apprenticeship trades of the construction and manufacturing industries, the journey level worker is typically an individual who has completed an apprenticeship program and has a certificate of journey level status. Federal regulations mandate a specific ratio of apprentices to journey level workers within a program to insure proper safety, training, and supervision of the worker. The rule Section 29.5(b)(7) stipulates, "The ratio language shall be specific and clear as to application in terms of job site, work force, department or plant." Typically, for potentially hazardous occupations, like those in construction and manufacturing, ratios of apprentices to journey level workers are low - no more than one apprentices for each journey level worker.

While the journey level worker is integral to the success of an apprentice, there are no formal qualifications required for the job. Moreover there are no specific training requirements for journey level workers in providing instruction to apprentices on-the-job.

D) Related Instruction

Federal rules require that all apprentices participate in related instruction. The rules suggest that apprentices take at least 144 hours of related instruction per year, which many apprenticeship programs choose to require. The rule does not specify who may provide related instruction or that the instruction be provided by an accredited body. Typically and traditionally, related instruction has been classroom training. The new Federal rules support the use of technology-based and distance learning for the related instruction.

Often, community colleges play a large role in providing related classroom training for apprenticeship programs. Most, if not all, community colleges offer training

that meets the requirements for the related training of an apprenticeship program. These courses are typically offered through the colleges' continuing education departments and may be taken as credit courses in an individual's pursuit of an associate's degree.

Related training may also be provided by the program sponsor, or by a group of program sponsors, who operate a training center. This type of training is most typically offered in the construction trades. One notable example of related training is the St. Louis Carpenters Joint Apprenticeship Program, the nation's largest apprenticeship program with almost 1,500 registered apprentices. It has been in operation since the mid-1950s and covers 44 eastern counties in Missouri, including St. Louis, and 33 counties in Southern Illinois. Three full-time training centers are located in Missouri and Illinois, with the largest center located in St. Louis. Apprentices typically attend two full weeks of training per year. In addition, articulation agreements are in place with six area community colleges that provide opportunities for apprentices to earn an associate's degree. There is also an agreement with the National Labor College at the George Meany Center, an accredited four-year institute at which apprentices can earn a Bachelor's Degree.

The instruction provided by the St. Louis program includes not only technical training but also basic safety training. Safety training is a crucial part of the instruction for hazardous occupations. The St. Louis program also teaches apprentices labor history and construction supervision. The program director believes that providing this background to apprentices promotes strong labor and management relationships.

E) Administration of Apprenticeship Programs

While the Fitzgerald Act gave the Secretary of Labor authority over apprenticeship programs, the regulations governing apprenticeship provide for recognition of state agencies to register and administer apprenticeship programs. Twenty-five states plus the District of Columbia and Puerto Rico are recognized by DOL for purposes of registering apprenticeship programs and apprentices. This formal designation of a state is particularly important as it relates to the Federal prevailing wage laws, which are discussed on page 11 below. Recognition conveys upon the state the same authority as DOL in terms of the exceptions for apprentices from the prevailing wage requirements.

States must meet certain basic requirements, outlined in Section 29.13, in order to be recognized. A State Agency (SAA) must be designated to oversee apprenticeship and is the officially recognized apprenticeship registration agency. Another requirement is the maintenance of a State Apprenticeship Council (SAC) that includes individuals familiar with apprenticeship and has an equal number of employer and employee representatives. Other members may be appointed to the SAC so long as the number does not exceed the number of either employer or employee representatives. Other requirements include: 1) insuring equal employment opportunity, 2) registering programs only in occupations that are apprenticeable according to the Federal regulations, and 3) providing reciprocity for multi-state programs in trades other than building and construction. Once a state is recognized, it must reapply to DOL for recognition every five years.

States that have elected to participate in the apprenticeship program are known as SAA states and all duties related to registering apprenticeship programs and apprentices are performed at the state level. The job of registering programs is generally assigned to the state's labor agency, and designated members of the staff perform the registration and administration functions. However, the level of staffing varies greatly and a few states have very limited staff assigned to apprenticeship programs. This is an issue that the DOL has addressed in its rule changes, discussed later in this paper.

The National Association of State and Territorial Apprenticeship Directors (NASTAD) was originally established, according to their Web site, "to promote and achieve an effective national apprenticeship system." This organization, which has been in existence for more than 50 years, represents the interests of the SAA, and provides a forum for the exchange of ideas and technical support for its members. In addition, the National Association of Government Labor Officials (NAGLO) is involved in the apprenticeship system since the administration of state activities is housed within the labor agency. Both of these associations are represented on the Advisory Committee on Apprenticeship.

In the 25 states without a recognized SAA, Federal staff have the responsibility and function of registering programs and apprentices. Federal and state apprenticeship staff register programs, provide assistance to those interested in establishing an

apprenticeship program, and oversee compliance with Federal and state rules, including compliance with equal employment opportunity provisions. In terms of assistance, a unique function performed at the Federal level is the approval of "pattern standards." These are apprenticeship program standards that apply to an industry segment, group of employers, or large multi-state employers. While not binding, these national standards for apprenticeship provide a prototype for individual programs and facilitate the establishment of individual programs. In the case of pattern standards for large multi-state employers, local programs often closely reflect the national standards. Once national standards are approved, they are disseminated widely by OA in the form of bulletins that go out to both state and Federal apprenticeship staff and are posted on the agency's web site under "What's New."

F) Status of Apprenticeship

OA maintains the Registered Apprenticeship Partners Information Data System (RAPIDS), a national database of registered apprenticeship programs and apprentices in 25 DOL-managed states and 8 SAAs. RAPIDS is the source of all of the numeric information contained in this report. According to OA, as of September 30, 2007, there were 458,108 active apprentices. While registered apprenticeships appear in nearly all industries, most are in the building and construction trades, the historical basis of apprenticeship. Figure 1 is an industry breakdown of active apprentices for the top ten industries with registered apprentices.

Figure 1
Apprentices by Industry

Industry	Number of Active Apprentices	Percent of Total
Construction	200,945	69 %
Transportation/Communication	47,934	16%
Manufacturing	16,290	6%
Public Administration	14,611	5%
Service	7,730	1%
Trade	3,168	1%
Agriculture	1,009	<1%
Mining	227	<1%
Finance and Related	150	<1%
Total	**292,065**	**100%**

Source: RAPIDS

The majority of occupations with the most apprentices are those within the building and construction trades. Figure 2 shows the top 25 occupations with the most registered apprentices along with the number of active programs as of September 30, 2007. The one notable exception outside the building and construction trades is the number two occupation, Heavy Truck Driver, which cuts across several industries, including construction. This occupation was not among the top 25 occupations until 2006, when two large national employers created apprenticeship programs and registered sizable numbers of apprentices. These employers are United Parcel Service (UPS) and Werner Trucking.

Figure 2
Top 25 Apprenticeship Occupations Ranked by Total, As of September 30, 2007

Rank	Occupation	Total Active Enrolled	Number of Active Programs	Average Enrollment/ Program
1	Electrician	45,609	3,209	14.2
2	Heavy Truck Driver	37,805	39	969.4
3	Carpenter	33,027	446	74.1

Rank	Occupation	Total Active Enrolled	Number of Active Programs	Average Enrollment/ Program
4	Plumber	18,578	2,644	7.0
5	Construction Craft Laborers	9,836	94	104.6
6	Pipe Fitter (construction)	9,542	722	13.2
7	Sheet Metal Worker	8,754	518	16.9
8	Structural Steel Worker	8,659	131	66.1
9	Roofer	5,943	139	42.8
10	Elevator Constructor	5,746	62	92.7
11	Drywall Installers	5,541	44	125.9
12	Sprinkler Fitter	5,433	124	43.8
13	Operating Engineer	4,837	131	36.9
14	Painter (construction)	4,795	248	19.3
15	Boilermaker	4,089	32	127.8
16	Bricklayer (construction)	3,729	194	19.2
17	Millwright	3,185	381	8.4
18	Heating/Air Conditioner-Installer	3,099	601	5.2
19	Powerline Maintainer	3,087	297	10.4
20	Powerline Installer & Repairer	2,886	92	31.4
21	Insulation Worker	2,328	101	23.0
22	Correction Officer	2,290	58	39.5
23	Child Care Development Specialists	2,282	971	2.4
24	Cook (hospitality & cruise ship)*	2,259	1	2,259.0
25	Cement Mason	2,240	127	17.6

Source: RAPIDS
* Note that the related occupation Cook (restaurant and hotel) also has 1,107 apprentices in 316 active programs.

History and tradition are not the sole reasons why apprenticeship remains strongest in the building and construction trades. Federal laws provide incentives for hiring and training apprentices in the building and construction trades. The most well-

known is the Davis-Bacon Act of 1931, which requires any Federal contract over $2,000 for the construction, alteration, or repair of public buildings or public works pay workers the prevailing wage in the local area. One of the exceptions to the prevailing wage requirements in the Davis-Bacon Act pertains to apprentices and trainees. Apprentices and trainees that are in a program approved by DOL may be paid less than the prevailing wage. Instead, they would receive the wages that are set out in the apprenticeship training plan and agreement. It should be noted that to date, DOL's OA recognizes only apprentices for the prevailing wage exception; it does not recognize trainees. Over the years, the prevailing wage provisions have been added to about 60 other statutes related to construction. In addition, over half of the states have their own prevailing wage laws that apply to state-funded construction projects although the dollar thresholds are generally larger than the Federal statute.

As of September 30, 2007, ten states accounted for over 25 percent of active apprentices in the U.S. California has the most apprentices, more than double the next leading state. Figure 3 shows the top ten states and the corresponding number of apprentices.

Figure 3
Apprentices by State

State	Active Apprentices
California	40,779
Illinois	19,661
Ohio	17,069
Pennsylvania	16,228
Florida	14,932
Missouri	14,662
Indiana	13,176
Texas	10,838
Nevada	10,750
Michigan	9,477

Source: RAPIDS

The number of active apprentices has increased modestly over the last two decades, from nearly 300,000 in the late 1980s to more than 400,000 today. Over the past five years, the number of new apprentices registered increased by almost 30 percent, from 134,340 in 2003 to 212,017 in 2007. As noted earlier, one occupation, Heavy Truck Drivers, accounted for a significant portion of the increases in 2006 and 2007, when over 15,000 new apprentices were registered in each of the two years.

III. Apprenticeship Initiatives

If apprenticeship is so great, why hasn't it grown more? This question is asked periodically by policy makers in ETA. Apprenticeship has always thrived in the traditional building and construction trades, and to some extent in manufacturing, as evidenced by the construction trades' hold on 69 percent of registered apprentices in FY 2007. However, its popularity outside of the traditional trades has always been somewhat limited. To address this issue, and to determine opportunities to expand registered apprenticeship, ETA has launched multiple initiatives. Some efforts have been industry focused, like the attempt to encourage the growth of apprenticeship in the child care industry through the child care development specialist occupation in the late 1990s. Grants helped to defer the costs of implementing programs in the child care field, and the initiative displayed moderate results. For FY 2001, registered child care development specialists were not listed among the top 25 apprenticeship occupations. In 2003, the occupation was listed at 25 with 2,390 active enrolled apprentices, and in 2007, it was listed as at 23, with slightly fewer apprentices - 2,282. According to the Bureau of Labor Statistics (BLS) data as of May 2006, there were 572,950 child care workers in the U.S., an occupation that is known for having a high turnover of staff.

Most recently, in July 2001, ETA felt that the National Apprenticeship System was being underutilized, particularly in high-growth industries. This led to the "Advancing Apprenticeship Initiative." Five teams were formed to develop and implement the initiative, which was jointly led by OA and NASTAD representatives. The planned three-phased effort included data gathering, implementation and evaluation. As part of this effort, staff training on outreach was undertaken and materials developed to inform and recruit potential new apprenticeship program sponsors. A directory of

sponsors for registered apprenticeship programs was developed for eight high-growth industries: healthcare, information technology (IT), social services, security transportation, energy, geospatial, and aerospace. The results of this initiative were never fully evaluated; however, this initiative did launch the series of actions described below.

A) Interim Certification

In August 2004, the OA Administrator formally approved the first "Certificate of Training" interim credential. This credential is defined as "a credential issued by the registration agency [i.e. Federal or state] upon request of the appropriate sponsor as certification of competency attainment by an apprentice." Career lattice apprenticeship occupations offer individuals an opportunity to move laterally or upward within an industry. The first approved career lattice apprenticeship occupation was in the healthcare industry. Since then others have been added. One example established in 2007 was for the security officer occupation. For this career lattice, certifications were established in six related fields, including healthcare, higher education, and commercial real estate. These occupations were established as Level 1 certifications with each specific occupation requiring between 3,000 and 6,000 hours of on-the-job learning. All six of these lead to a Level 2 certification which is a Security Officer Manager and requires an additional 2,000 hours of on-the-job learning.

Two other targeted career lattice certifications are illustrative of how the interim certifications work. In August of 2005, OA approved new national guideline standards specifically for CVS' pharmacy operations. These guideline standards established a leveled training pathway in apprenticeship for pharmacy support staff. Three levels of training with interim certifications are outlined: Level I, Pharmacy Service Associate, requires between 200 and 300 hours of learning on-the-job; Level II, Pharmacy Support Technician, requires between 800 and 1,200 on-the-job hours; and Level III, Lead Pharmacy Technician, requires between 1,000 and 1,200 hours.

In August of 2006, OA approved the revision of the occupation of Chief Cook (water transportation) for the maritime industry. The Paul Hill Center for Maritime Training and Education submitted the request for modification of the apprenticeship occupation to establish three interim certificates of training levels, any of which could lead to a certificate of completion for the chief cook occupation. These three related

occupations provide for interim certification based on 1,000 hours of on-the-job learning. The OA tracks these interim certification programs through its national apprenticeship data system. However, no data is available on the extent to which it is being used or the number of these certificates that have been issued. It is our understanding that such data will be made available in the near future.

The recently revised Federal rules officially provide registration agencies, both Federal and state, with the option to issue official interim credentials. However, these interim credentials may only be issued within a recognized apprenticeship occupation.

B) High-growth Industry Initiative in Apprenticeship

In 2003, ETA awarded a grant of nearly $3.8 million to the Computer Technology Association (CompTIA) to implement apprenticeship programs within the technology industry. This five-year grant was provided to develop the standards and institute marketing strategies that would lead to large-scale adoption of apprenticeship by IT workers and employers. The goal was set for nearly 384,000 IT workers to become registered apprentices through the involvement of 6,700 employers. In March 2007, national standards were approved and issued for four separate occupations for CompTIA: E-Commerce Specialist, Information Assurance Specialist, Information Technology Generalist, and Information Technology. The four occupations provide a career pathway within the IT field. As of March 2008, there have been no registered apprentices.

C) Other Discretionary Grants with Connections to Apprenticeship

ETA awards a significant amount of funds under its discretionary grant programs. A few of these programs have direct connections to apprenticeship, while for others apprenticeship may be incorporated into the grant project. In 2007, $20 million was awarded to improve education and employment outcomes for youth offenders, and four of the grants specifically focused on apprenticeship. The four projects, which total $3,771,502, are located in California, Ohio, Kansas, and Minnesota. These are two-year grants the outcomes of which will be watched to determine how successful they have been in placing young people in apprenticeship programs. Also in 2007, $900,000 was awarded to three organizations to support the promotion and placement of more women in apprenticeship programs. ETA has traditionally supported organizations that focus on

women in apprenticeship. Over the past several years, ETA has awarded Community-Based Job Training Grants to community colleges and their partners in local communities to provide training in local high-growth, high demand industries. Over a three year period approximately 180 entities have received $375 million in grants. These grants focus on specific industry sectors, including the construction industry. Several specifically reference pre-apprenticeship training and apprenticeship in the fact sheets describing their projects.

ETA's Workforce Innovation in Regional Economic Development (WIRED) project has provided over $300 million in grants to 39 areas. The goal of the WIRED program is to bring together key regional stakeholders in order to develop a strategic plan that integrates economic and workforce development activities with the broad goal of aligning programs and resources to support the region's economic strategy. At least one, and likely more, of the grantees have specifically addressed apprenticeship in project proposal plans. In Wisconsin, the South Central/Southwest region plans to link apprenticeship with the state's Career One-Stop system. The initiative is still in the planning and implementation phases, thus no measurable outcomes are available.

D) Integration with the Workforce System

Since early FY 2007, ETA has been promoting the integration of apprenticeship within the workforce system, including the One-Stop Career Centers. Two directives have been issued to workforce development system agencies and partners. The first, Training And Employment Notice No. 17-06, issued in November 2006, went to state workforce agencies (SWAs), SAAs, and Office of Apprenticeship staff . This notice communicated the new vision for apprenticeship and promoted its expansion outside the traditional trades, its use as a postsecondary option for training workers, and its connections to the One-Stop delivery system. More detailed guidance was issued in the Training and Employment Guidance Letter 02-07, dated July 12, 2007. This notice provided: 1) extensive background information on apprenticeship; 2) guidance on using Workforce Investment Act (WIA) funding for apprenticeship; 3) the relationship between apprenticeship and the WIA performance measures; and 4) examples of collaboration between apprenticeship and workforce agencies at the state and local levels. ETA has

also hosted webinars on the subject as a way to educate and promote the integration of apprenticeship within the work force system.

Each year, OA provides its staff with written program guidance establishing goals and objectives for the FY. For FY 2008, the first priority task listed was the integration of apprenticeship with the public workforce investment system. Regional apprenticeship offices must submit annual plans on the strategies they will use to meet the goals. For goals surrounding integration with the public workforce system, specific guidance is provided around how to meet the goal. Although the effort to integrate apprenticeship with the public workforce system is too new to be able to assess its impact, it does have potential for expanding apprenticeship, particularly if state and local workforce agencies decide to use WIA funds to support the training (i.e. related instruction) that is a part of apprenticeship.

E) Revision of the Apprenticeship Regulations

For the first time in 30 years, DOL has issued revisions to the apprenticeship regulations. The final rules were published in the *Federal Register* on October 29, 2008, and took effect on December 29, 2008. The changes update the apprenticeship system so that it is in tune with the economy and is responsive to workforce challenges. Many of the changes formalized trends that have been incorporated into the apprenticeship system in the last decade. The regulations acknowledge and establish the interim credentials that have been established by OA over the past several years. Establishing interim credentials in apprenticeship's regulatory framework should promote their use in apprenticeship programs throughout various industries and occupations. Competency-based instruction, which is permitted but not common in apprenticeship programs, has been formalized in the regulations. Apprenticeship programs may be established based on the traditional time-based approach, a competency-based approach that does not require specific hours of either on-the-job training or related instruction, or a hybrid approach, which combines the two.

Significant changes were made regarding the relationship between Federal and state apprenticeship agencies. SACs are not eligible for official recognition, although states seeking recognition are still required to have such Councils. Instead, recognition is

limited to state agencies and there are requirements that the state provide sufficient resources so that the state agency is equipped to carry out its functions. Further, state agencies are required to integrate registered apprenticeship into the state's economic development strategies and workforce investment system. Under the regulations, states will have to reapply every five years to be recognized as an SAA. Appendix B contains the Apprenticeship Final Rule Fact Sheet issued by ETA outlining the proposed rule changes.

IV. Youth in Apprenticeship

A) Participation of Youth in Apprenticeship

OA records limited data on the characteristics of registered apprentices beyond gender, age and minority status. There is no data available on an individual's disability status and, accordingly, there is no way of knowing to what extent individuals with disabilities participate in apprenticeship programs. Our interviews with those associated with apprenticeship uncovered little information that would provide a basis for estimating the extent to which individuals with disabilities are represented in apprenticeship programs. John Gaal, Director of the Joint Carpenters Apprenticeship program in St. Louis, indicated that in the recent past there were several students with hearing impairments and likely a larger number with learning disabilities - an estimated 10 percent. A Wisconsin study of post high school outcomes of youth with disabilities found that four percent of the youth with disabilities participating in the first year's study group went on to apprenticeship programs. In the second year's group of youth included in the study, six percent of the youth with disabilities went on to apprenticeship programs. This suggests that a few young people with disabilities move into apprenticeship post high school.

Furthermore, we were able to identify a program designed specifically for individuals with disabilities. This program is in Washington State and trains individuals with disabilities for Federally-funded diesel mechanic jobs. National Industries for the Severely Handicapped (NISH) is a partner and supports the program administration costs. It is a small program with 16 apprentices, most of whom are adults. Only one of the participants is under the age of 25.

Apprenticeship is predominantly a program for training adult workers. The average age of apprentices is 27. However, there are significant numbers of older youth who participate in apprenticeship programs. Age data for youth is broken down into two ranges: 16-18 and 19-23 years old. Relatively few youth age 18 and under participate in apprenticeship programs. One reason for this is that most apprenticeship programs require applicants to possess a high school diploma. Additionally, many apprenticeship programs are in occupations that are considered hazardous under Federal and state child labor laws and, even though there are exceptions for apprenticeship, employers in these occupations tend not to hire anyone under the age of 18.

Figure 4 shows participation of youth ages 16 to 23 in apprenticeship programs across 12 industry clusters. The data is broken down by age ranges and includes new registrants, active apprenticeships, and completions for FY 2006. It should be noted that these figures represent activity during FY 2006. Thus, the columns "Active Youth", "New Registrants," and "Completed" should not be compared to one another. Apprenticeship programs are generally longer than one year. Thus, "Active Youth" and "New Registrants" would not be expected to complete their programs within the same year.

Figure 4
Youth Apprentices by Industry

Industry Cluster	Active Youth 16 -18	Active Youth 19 - 23	New registrants 16 -18	New registrants 19 - 23	Completed 16-18	Completed 19-23
Advanced Manufacturing	933	3,235	197	939	48	198
Automotive	161	230	41	72	15	40
Biotechnology	5	32	2	12	0	3
Construction	9,120	53,350	3,692	21,638	877	6,271
Energy	75	1,227	35	594	6	153
Financial Services	19	37	8	29	1	2
Geospatial Technology	48	145	23	90	2	6
Healthcare	69	141	38	95	4	4
Hospitality	197	701	73	228	17	50

Industry Cluster	Active Youth 16 -18	Active Youth 19 - 23	New registrants 16 -18	New registrants 19 - 23	Completed 16-18	Completed 19-23
Information Technology	56	56	1	26	0	4
Retail Trade	216	53	33	15	9	1
Transportation	49	1,035	8	747	2	14
Total	**11,099**	**62,224**	**4,231**	**25,600**	**997**	**7.191**

Source: RAPIDS

The percentage of youth that participate in apprenticeship programs varies by occupation. Figure 5 contains data on the participation of youth ages 16 to 23 in apprenticeships by occupation in FY 2007.

Figure 5
Youth Apprentices by Occupation

Occupational Title	Number of Youth 16 -23	Percent of all apprentices
Electrician	22,714	50
Bricklayer (construction)	1,751	47
Sheet Metal Worker	4,083	47
Carpenter	15,602	47
Pipe Fitter (construction)	4,395	46
Pipe Fitter (sprinkler systems)	2,514	46
Painter (construction)	2,091	44
Plumber	8,191	44
Structural Steel Worker	3,679	42
Operating Engineer	1,963	41
Construction Craft Laborer	3,991	41
Dry Wall Applicator	2,205	40
Millwright	1,265	40
Line Maintainer	1,219	39
Roofer	2,325	39
Line Erector	1,111	38

Occupational Title	Number of Youth 16 -23	Percent of all apprentices
Boilermaker	1,533	37
Heating & Air Conditioning	1,154	37
Elevator Constructor	1,382	24
Truck Driver, Heavy	1,194	3

Source: RAPIDS

Not surprisingly, the largest numbers of youth apprentices are in the construction trades where their numbers approach 100,000. However, the percentage of youth participation is a mere 45 percent in construction – compared to 72 percent in the retail industry, even though there are only 316 apprentices in the retail trade. In fact, in terms of numbers, youth participation in all of the other major industry groups represents less than one-third of the number of youth in the building and construction trades. This suggests when considering apprenticeship for youth with disabilities, it would be wise to take a hard look at the opportunities in the building and construction trades, and to include strategies that address the construction industry as part of an overall plan to increase participation from youth and youth with disabilities in apprenticeship programs. Programs that act as feeder programs into apprenticeship, either formally or by providing training in the apprenticeable occupations via the apprenticeship model, are especially worthwhile for youth consideration.

B) Youth Feeder Programs for Apprenticeship

This section will discuss two types of feeder programs for apprenticeship: 1) those that have formal linkages with apprenticeship programs, and 2) those national programs that provide training in the major apprenticeable occupations, though they may not have formal ties to apprenticeship. The first category includes pre-apprenticeship, youth apprenticeship, and school-to-apprenticeship programs. These are three similarly structured programs and in many cases the differences among them are in name rather than structure. Generally, however, both youth apprenticeship and school-to-apprenticeship programs tend to be secondary-school based while pre-apprenticeship programs tend to operate outside the public secondary school system. School-to-apprenticeship and youth apprenticeship programs are, as their names suggest, oriented to

youth, generally under the age of 21. Pre-apprenticeship programs may have both youth and adult participants.

The results of an internet-based search on existing pre-apprenticeship, youth apprenticeship, and school-to-apprenticeship programs that operate in the states may be found in Appendix C of this report. Although it provides a picture of the extent to which these programs operate, it is not an exhaustive list, particularly for pre-apprenticeship programs. The Home Builder's Institute, featured in Figure 6, offers pre-apprenticeship programs along with training and job placement opportunities for both youth and adults.

Figure 6
Home Builders Institute

The Home Builders Institute (HBI) was established in 1983 as the workforce development arm of the National Association of Home Builders (NAHB), and is committed to advancing the education and training programs of the residential construction industry. It is an example of an industry-led training and employment program that produces skilled workers, provides job placement services, and promotes the residential construction industry as a career. Its ties to industry are integral to HBI's success in placing individuals into jobs, and its programs serve as feeder programs to apprenticeship for youth, adults, and individuals with disabilities. In addition to sponsoring its own programs, HBI has partnered with Job Corps for nearly 30 years and has developed a curriculum used by many of the nation's YouthBuild organizations. The Job Corps trades affiliated with HBI include brick masonry, carpentry, electrical wiring, facilities maintenance, landscaping, painting and plumbing, and are offered on 67 Job Corps campuses across the country. Project CRAFT and Project HOPE are two examples of HBI-sponsored programs that emphasize pre-apprenticeships and apprenticeships.

Project CRAFT

Project CRAFT (Community, Restitution, Apprenticeship-Focused Training), geared toward low-income, at-risk, or adjudicated youth, combines academic remediation with vocational training, and provides job placement assistance following completion of the program. Project CRAFT seeks to reduce the youth recidivism rate through training and placing young people in jobs in the residential construction industry. Many of the youth participants (60-70%) have an accompanying disability such as substance abuse or mental health issues. Youth that participate in Project CRAFT are prepared for careers in the carpentry, landscaping, bricklayer, electrician, or facilities maintenance fields. While enrolled in the apprenticeship training program participants must complete their PACT—Pre-Apprenticeship Certificate Training. This certification is performance and competency based and, once completed, provides the youth with a certificate conveying his or her qualifications that is recognized throughout the industry. Project CRAFT operates in several locations between Mississippi, Tennessee, and Florida. Florida, with eight Project CRAFT sites, has the largest state participation, which is both institutional and community based. In the past, funding has come from both state and national level sources; however, currently the programs are predominantly funded by states.

Outcomes: Currently, about 80% of enrolled students complete the program and receive their certification, but few Project CRAFT participants transition into a full registered apprenticeship. Many of the youth who enter have not earned their high school diploma, and, unlike Job Corps or YouthBuild, obtaining a GED over the course of the program is not a requirement (HBI greatly supports GED and all participants are required to be enrolled in an academic component). Since apprenticeship programs generally require a high school diploma or GED, this is likely a factor in why so few program completers enter apprenticeship.

Project HOPE

Project HOPE (Homebuilding Opportunities for Positive Employment) was designed exclusively for people with disabilities. Like Project CRAFT, Project HOPE offers trades training and job placement

services to students that are over 18 years of age and have a documented disability. It is a 12-week pre-apprenticeship training program where classroom instruction comprises 20 percent of the period, and on-the-job training is 80 percent. Project HOPE works with local Home Building Associations (HBAs) to connect the needs of rehabilitation clients with the workforce needs of the local housing industry. Students train for a range of jobs, from administrative office support to framers and carpenters. Project HOPE was originally funded through the Projects with Industry (PWI) initiative under the Department of Education. PWI engages the participation of private partners in business and industry that provide advice on appropriate skills and training in order to create and expand job and career opportunities in the labor market. The program supports all aspects of employment, including job development and placement, career advancement, and training services. This program was created to assist individuals with disabilities. Since 1997 Project HOPE has succeeded in placing over 500 people in full-time jobs. It now operates only in the Columbia area of South Carolina.

Youth apprenticeship programs largely seem to be clustered in two states: Georgia and Wisconsin. Wisconsin in particular has a long history with apprenticeship. Pre-apprenticeship programs are spread among a number of states, but there seems to be a concentration of these programs in the states of Washington, California, Ohio and Oregon. The largest concentration of school-to-apprenticeship programs is found in Ohio, which is also one of the states with the largest number of active apprentices.

No information was found on the extent to which these programs serve youth with disabilities. A study conducted of students with disabilities in youth apprenticeship programs in Wisconsin does, however provide some information. This three-year research study looked at the experiences of students with disabilities who participated in the Wisconsin Youth Apprenticeship programs between 1996 and 2000. The study found that 10 percent of those who graduated from the Wisconsin programs had disabilities, mostly learning disabilities, and that youth with disabilities had a higher rate of non-completion than other youth. One reason for this may be a lack of accommodations and support. As part of the study, a number of youth with disabilities were interviewed. Few formal accommodations were provided to youth at the worksite. Students were more likely to receive accommodations at their schools, particularly if there were attending their regular high school as opposed to an area vocational or technical school.

Two national programs that provide education and training in the top apprenticeship occupations are Job Corps and YouthBuild. Both have the potential to serve as feeder programs into registered apprenticeship. While YouthBuild focuses on the building and construction trades, Job Corps provides more variety in course offerings, ranging from culinary arts to automotive technology. Job Corps and YouthBuild are

highlighted as feeder programs for youth because they are national in nature, provide education and training to significant numbers of youth, and focus on occupations that have the most registered apprentices.

Job Corps, DOL's no-cost education and vocational training program, recruits young applicants who are in need of job and employability skills. There are currently 122 Job Corps centers in 48 states, the District of Columbia and Puerto Rico *(links to all organizational web sites mentioned in this paper are provided in the "References" section)*. Since its founding in 1964, Job Corps has served over 2 million young people nationwide, and provides training and education to about 62,000 students each year. Job Corps is largely a residential program although most centers also accept day students. To participate in Job Corps, youth must meet the following requirements:

- Be 16 to 24 years old;
- Have U.S. citizenship or legal resident status;
- Meet income requirements;
- Agree to adhere to the zero-tolerance policy against substance use and violence; and
- Be ready, willing, and able to fully participate in an educational environment.

Job Corps is authorized under Title I-C of the WIA, and is a publicly funded entity within DOL. The 122 Job Corps centers have capacities ranging from 50 to 1,900 students. Of this total, 98 centers are operated by private contractors and 28 centers are operated by Federal agencies (such as the Forest Service, Bureau of Reclamation and the National Park Service). Dedicated Federal staff members at both the national and regional levels provide policy and program direction, technical assistance and oversight of center operators. On average, centers spend about $25,000 per participant (*source: Job Corps assessment*).

All Job Corps centers, regardless of the trades offered, maintain standard eligibility criteria and teach a core set of competencies in academic, career technical, information technology, employability, and independent living skills. These fundamentals are essential for students to benefit from technical training, earn a high school diploma or General Education Development Diploma (GED), and secure employment following graduation. Additionally, DOL requires and maintains a system

of data collection and reporting that is consistent across centers. Job Corps is a very much a data-driven program that stresses performance outcomes.

A significant feature in Job Corps is the focus on students obtaining a high school diploma or GED while receiving training for a specific career path. Within its policy handbook Job Corps maintains:

> Centers shall make every possible effort to assist students in obtaining their high school diplomas, where attainment is feasible for a student during his or her enrollment… [and] Centers shall implement a program to support student attainment of high school diplomas. (3.11-1)

A high school diploma program must be accredited by that state's Department of Education or a recognized accrediting boy and the center cannot extend any of the necessary fees for obtaining a high school diploma to its students. Some centers, such as those that are degree-conferring high schools, Local Education Agencies, or those that receive funds from the U.S. Department of Education must ensure that the diploma program is in compliance with Section 504 of the Rehabilitation Act and the Individuals with Disabilities Education Act (IDEA). Furthermore:

> Centers shall implement a program to support student attainment of GED certificates. (3.11-1)

Students seeking a GED certificate are required to enroll in GED preparation courses and take official GED practice tests. In addition to the career technical related instruction, students enrolled in a GED program receive instruction in writing skills, reading, social studies, science, and advanced mathematics. The centers have linkages with local GED test sites to provide regularly scheduled testing dates and pay all fees associated with the students' GED testing. Job Corps emphasizes that these stipulations are minimum requirements, and that centers are encouraged to invest further resources into diploma and GED attainment (for example, by developing concurrent high school diploma or GED opportunities through the local or public education agencies). Information on GED and diploma attainment is recorded in the center's Information System, and copies of documents, or official GED scores, are included in students' permanent files. In 2006, 57 percent of Job Corps students obtained a high school diploma or GED while enrolled in the program (Source: *Job Corps assessment).*

Job Corps uses the Career Development Services System (CDSS), a four phase plan that describes the steps a Job Corps student must complete in order to succeed in his or her career goals. The Career Preparation Period (CPP) of the CDSS lasts for a student's first 60 days in a Job Corps center. At this time, the center staff communicates the expectations Job Corps has for the student. Additionally, students receive assistance in creating their Personal Career Development Plans (PCDP), which outline the goals a student hopes to accomplish during his or her enrollment in the center. Placing the CPP immediately following enrollment serves two purposes: 1) it helps students determine their career interests for training; and 2) should the student not complete the entire program, he or she will leave the center with some basic work-readiness skills that are useful in finding a job.

The next phase, the Career Development Period (CDP), occupies the majority of a student's time on site. Students are 1) taught a trade, 2) acquire technical and academic skills, 3) improve their communication abilities, and 4) learn the techniques for success in life after Job Corps, such as job searching and independent living skills. After graduation, the students will enter the Career Transition Period (CTP), where they continue to interact with Job Corps staff or other service providers. During the CTP, students receive assistance in obtaining their first job, living arrangements, family support, transportation, and the additional resources necessary to help them continue working.

Job Corps enrolls youth with disabilities and has a Web site dedicated to disability issues: *Job Corps disABILITY*. The site provides resources to educate center staff about how to best support the needs of students with disabilities. Subject matter includes:

- Disability legislation and Job Corps programming;
- Preparing graduates with disabilities to enter the workforce;
- Educating employers about youth with disabilities;
- Identifying common inclusion strategies;
- Interacting appropriately and comfortable with people with different types of disabilities;
- Understanding Job Corps' reasonable accommodation process; and
- Addressing accessibility issues at the center.

Additionally, every Job Corps region has a designated disability coordinator that an individual center's disability coordinator may contact for one-on-one assistance. Many, but not all, centers have separate disability coordinator positions.

Job Corps provides training in all of the leading apprenticeship occupations, especially those in the construction industry. Construction programs are offered by center operators directly or through subcontracts with trainers from the construction industry, called National Training Contractors (NTC). In 2005, the Administrators of Job Corps and OA entered into an intra-agency collaboration to explore ways of increasing the number of Job Corps graduates into registered apprenticeship programs. Since that time, approximately 3,300 Job Corps graduates have been placed in registered apprenticeship programs, mostly through the NTCs. Five of the eight NTCs have registered their respective training standards with OA for graduates to receive their "Certificate of Training" as an interim credential, which will help Job Corps graduates transition into registered apprenticeship. These include training programs offered by the HBI, the International Masonry Institute, the International Union of Operating Engineers, the International Union of Painters and Allied Trades, and the United Brotherhood of Carpenters. Job Corps has also included language in its current Memorandum of Understanding (MOU) with each of the NTCs that specifies, among other training outcomes, the NTCs' responsibility of placing students into a registered apprenticeship training program.

On January 25, 2008, DOL, through the Job Corps program, awarded a sole source grant to the AFL-CIO Appalachian Council, Inc., for the purpose of significantly increasing the number of Job Corps graduate placements in registered apprenticeship programs throughout the following 11 Appalachian states: Alabama, Georgia, Kentucky, Maryland, Mississippi, North Carolina, Pennsylvania, South Carolina, Tennessee, Virginia and West Virginia. The grantee's primary goals are to place a minimum of 350 graduates, annually, in Registered Apprenticeship Programs, with 50 percent of them placed in Registered Apprenticeship Programs sponsored by member organizations of the AFL-CIO.

YouthBuild USA is a network of local YouthBuild programs that serves vulnerable youth from the community and provides benefits to the community through

rehabbing or constructing new homes for deserving families. Participating youth are introduced to the education and skills necessary to gain employment while they revitalize or construct housing for low-income and homeless individuals. Since the program began in Harlem in 1978, it has been replicated in cities across the country. In 1990, YouthBuild USA was formed as an umbrella organization that provides technical assistance and support to all YouthBuild programs; however, YouthBuild organizations receive funds through annual competitions with a Federal agency. The U.S. Department of Housing and Urban Development (HUD) first awarded grants to YouthBuild programs in 1994, but this responsibility transitioned to ETA in 2006. The switch in agencies helps to consolidate youth training programs in one department, as DOL already operates Jobs Corps and WIA youth funded programs. It also indicates a shift in YouthBuild's primary goal of constructing affordable housing to teaching and preparing young people for employment.

YouthBuild provides full-time programs 6 to 24 months in duration that allow youth between 16 and 24 years of age to work toward their GED or high school diploma and learn marketable job skills while performing a community service. All youth are low-income and many have experienced welfare, homelessness, foster care, or adjudication. On average, students are at a seventh grade reading level and 90 percent have not graduated from high school. Most of the nation's YouthBuild programs are sponsored by non-profit community- or faith- based organizations, though some are sponsored by public agencies. YouthBuild programs operate as charter schools, alternative schools, or GED programs that students attend full-time on alternate weeks while working on-site the remainder of the time. Often, the classes are small to emphasize one-on-one attention between students and instructors (*source: YouthBuild USA web site).*

Approximately half of all YouthBuild centers use a curriculum developed by either the National Center for Construction Education and Research (NCCER) or HBI. NCCER is an educational foundation that focuses on the development of construction curricula and teaching materials, while HBI operates its own construction training programs in addition to providing a curriculum. Each offers the advantage of conferring industry credentials through their curricula. In addition to acquiring construction skills

and their GED or diplomas, YouthBuild participants receive personal counseling and peer support to help them address their past issues, and set and attain goals for the future. The acquisition of leadership skills is also a mark of success in the YouthBuild participant. YouthBuild maintains an alumni association for graduates to develop and continue positive relationships after leaving the program.

Despite the training YouthBuild programs provide in the building and construction trades, few direct linkages appear to exist between these programs and registered apprenticeship. YouthBuild Providence, featured in Figure 7, has made a conscious effort toward transitioning its students to apprenticeship. The skills gained through a YouthBuild program may give successful graduates an advantage in the application process should they decide to pursue a registered apprenticeship.

Because all YouthBuild programs must re-compete for grants each year, planning long-term initiatives can be a challenge for program administrators. ETA has therefore moved YouthBuild grants to two-year grants to alleviate some of the apprehension surrounding year-to-year funding. Additional funding to support individual centers comes from private and public sources, predominantly at the local level. According to YouthBuild USA, there are approximately 230 YouthBuild programs operating in 44 states, including the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. In 2007, 96 YouthBuild programs received funding awards from ETA, totaling $46,998,938 (*source: YouthBuild ETA web site)*. In 2008, 11 new YouthBuild programs were added. ETA's objectives since acquiring YouthBuild include:

- Strengthening the connections between YouthBuild and community colleges, particularly in GED obtainment;
- Creating a consistent relationship between YouthBuild and One-Stop Centers across the country;
- Developing an online collaborative workspace that links individuals from YouthBuild together; and
- Ensuring that program and grant management operates smoothly in the initial years that YouthBuild is within ETA.

Figure 7
YouthBuild Providence and ProvPlan

The YouthBuild program of Providence, Rhode Island, has strong ties to area construction employers and has been successful in placing its graduates in apprenticeship programs within the construction industry. Providence Plan (ProvPlan), a non-profit community organization to improve the economic and social well-being of Providence, its residents, and its neighborhoods, serves as the host organization for YouthBuild in the city of Providence. ProvPlan was founded in 1992 and aims to:

1) Put people to work.
2) Retain the middle class of the city of Providence.
3) Make Providence's neighborhoods safe and livable.
4) Prepare today's children for tomorrow's jobs.
5) Provide decent, affordable housing.
6) Increase jobs and tax base in downtown Providence.

ProvPlan actively maintains partnerships among Federal and local agencies, interest groups, community organizations, and residents to ensure that these goals are realized. YouthBuild Providence, which began in ProvPlan in 1996, is a 10-month program that provides rigorous academic and job-preparedness curricula, GEDs, and life skills for succeeding in the workforce. Participants are unemployed or underserved young adults between the ages of 16 and 24 who are poor, academically deficient, or are adjudicated youth. Additionally, ProvPlan utilizes its own version of IEPs within its programs, as many of its youth participants had them in high school. A baseline educational level is established for each student before their acceptance into the program, and an educational assessment indicates if an individual will require accommodations.

YouthBuild Providence implemented its focus on connecting to registered apprenticeship opportunities following its careful consideration of apprenticeship's advantages. The construction industry in Rhode Island is highly unionized, and YouthBuild Providence has taken advantage of this reality by forging partnerships with the Carpenters Union Local 94 and the Electricians Union Local 99. Representatives from these unions and the Service Employees International Union Local Union 1199 sit on ProvPlan's Advisory Committee.

YouthBuild Providence disseminates knowledge to its students about registered apprenticeship so that individuals have the tools to decide if apprenticeship is an appropriate career choice. The partnerships forged between the center and apprenticeship sponsors and unions augments the formation of knowledge through career panels, guest instructors, apprenticeship coordinators, and board leadership. Student success in the transition is based on communication, addressing potential barriers, and striving for retention in apprenticeships.

Because apprenticeship programs in Rhode Island are predominantly within commercial construction trades, and YouthBuild's focus is residential construction, some modifications of the YouthBuild Providence program were necessary to meet the needs of the local industry. Program changes included: 1) improving the construction curriculum; 2) providing more exposure to commercial construction; and, 3) working on new construction instead of renovation projects. For YouthBuild Providence students, performance expectations were amended to more closely match those of the apprenticeship industry, additional graduate resources and support systems were put in place, and the program is working toward direct entry agreements. Following the initiation of the apprenticeship partnership, one-third of YouthBuild graduates entered an apprenticeship program with average starting wages of $14.00 per hour.

ETA considers youth with disabilities an important issue for YouthBuild to address now that the program is within its agency. ETA provides technical assistance to local YouthBuild grantees and is currently developing plans for providing assistance to build the capacity of YouthBuild programs to better serve youth with disabilities.

Data on YouthBuild's outcomes was limited, and none was available regarding youth with disabilities. Between 2002 and 2006, 14,386 students entered a YouthBuild program, of which 59 percent eventually graduated. Seventy-six percent of those who participated were placed in jobs or enrolled in further education, and 33 percent of those without high school diplomas or GEDs when they entered were able to earn them while in YouthBuild (source: *YouthBuild USA web site*). ETA has established a reporting system for YouthBuild grantees that does include data on youth with disabilities. This is a fairly recent effort on the part of ETA, and data is not yet available although it will be in the near future

V. Occupational and Industry Trends—Looking to the Future

Though registered apprenticeship has made progress in expanding beyond the traditional building and construction trades, most of the top 25 occupations for apprenticeship continue to be in these trades. This trend is likely to continue, and construction trade occupations are projected to remain in fairly high demand.

Two major factors dictate the future of occupational demand: 1) growth in the industry or occupation; and 2) the number of replacement workers needed as current workers leave the workforce due to retirement or disability. Job growth statistics give only a partial picture of the likely future demand for workers in many occupations. In the skilled craft trades particularly, replacement is a significant factor as long-time, "baby boomer," journey level workers leave the labor force. BLS publishes data on employment projections by occupation that includes projected job openings due to growth and net replacements. Review of this data suggests that demand for workers in the top apprenticeship occupations will remain strong. The latest data compares the number of jobs in 2006 with the projections for 2016. Figure 8 reveals the projected job growth for selected occupations in the building and construction trades that are among the top apprenticeship occupations. The occupations are listed in the order that they are found on Figure 1.

Figure 8
Projected Job Growth in Top Apprenticeship Occupations
(Numbers in thousands)

Occupation	Employment Numbers		Change		Total Job Openings due to growth and net replacements 2006-16
	2006	2016	Number	Percent	
Electrician	705	757	52	7.44	234
Carpenter	1,462	1,612	150	10.26	348
Construction Craft Laborers	1,232	1,366	134	10.92	227
Sheet Metal Worker	189	201	13	6.75	59
Roofer	156	179	22	14.34	58
Operating Engineers	424	460	35	8.37	118
Painters (construction)	463	517	54	11.77	137
Boilermakers	18	20	2	14.01	9
Bricklayer (construction)	158	174	15	9.65	48
Cement Mason	222	247	25	11.40	89

Source: Appendix to November 2007 Monthly Labor Review, BLS

Of the ten occupations listed in Figure 8, six are well above the projected national average increase in job openings for all occupations (i.e., 10.36 percent), and several others are only a small percentage below that level. All of these jobs offer opportunities for employment in occupations that have traditionally had the largest numbers of apprentices. Furthermore, these are high-wage jobs. Most pay above the average mean wages for all occupations, as shown in Figure 9.

Figure 9
Mean Annual Wages for Selected Occupations, May 2006

Occupation	Mean Wages, May 2006
All	$39,100
Electrician	46,620
Carpenter	44,780
Construction Craft Labors	29,930
Sheet Metal Workers	40,780

Occupation	Mean Wages, May 2006
Roofers	35,340
Operating Engineers	40,560
Painters (construction)	34,220
Boilermakers	48,600
Bricklayers	44,370
Cement Masons	35,630

Source: BLS: National employment and wage data from the Occupational Employment Statistics survey by occupation, May 2006

Even with the ongoing efforts to expand the use of apprenticeship across industries, we believe a high percentage of apprenticeships in construction trades will persist in dominating the list of the top 25 apprenticeship occupations. Because these are high-wage careers, a focus is needed on how to increase participation of youth with disabilities in these occupations as well as emerging ones.

As noted earlier, apprenticeship occupations are skilled occupations by definition. They are occupations that require postsecondary education and training, though not usually a four-year degree. In apprenticeship, the focus is on a wide variety of occupations (as evidenced by the 950 apprenticeship occupations) that in the past were considered for the "non-college bound" youth. This is no longer the case given the complexities of the work place and the advances in technology. Many of the apprenticeship occupations today lend themselves to associate's degree programs and most, if not all, community colleges that provide related apprenticeship training also provide a program of studies that leads to an associate's degree. Thus, participating in an apprenticeship program offers a young person multiple benefits: entry-level employment, an industry-recognized certification, and opportunity to earn a college degree.

There are many occupations that have already been recognized as apprenticeable that are also in demand throughout industry. This helps mitigate at least one of the hurdles to creating more apprenticeship opportunities for youth with disabilities. Since so many already exist, there is no need to create new apprenticeable occupations. It would be more beneficial to compare some of the in demand occupations with apprenticeship occupations to identify opportunities for apprenticeship growth. BLS

regularly publishes data and commentary on the occupational outlook across the U.S. The BLS publication, *Occupational Outlook Handbook*, is published every two years; the most recent edition is for 2008-2009. An article in the *Handbook*, "Tomorrow's Jobs," provides a good snapshot of both the industries and the jobs that are expected to grow. With respect to industries, the top growth industries projected for 2006 to 2016 are: education and health services; professional and business services; leisure and hospitality; and trade, transportation and utilities. Each of these industry clusters contains many apprenticeship occupations that have also been identified as high-growth.

"Tomorrow's Jobs" looks at occupational growth thorough several lenses. The article identifies growth occupations in terms of numbers, percent, and education and training. Many apprenticeable occupations (outside of the building trades) are among those that have been identified as high-growth. A few are on the list of top 25 occupations for apprenticeship. Others are ones for which the OA has established national standards with large employers and associations and/or provide career lattice opportunities through apprenticeship.

The apprenticeship occupations projected to grow by the largest percentages includes personal and home care aides, home health aides, veterinary technologists and technicians, medical assistants, physical therapy assistants, and pharmacy technicians. None of these are among the top apprenticeship occupations. However, several offer career lattice opportunity. Consider the occupation of home health aide, which is a 2,000 hour competency-based apprenticeship program. Within that occupation, there are five specialties that require only 675 to 700 hours of competency-based training and provide interim certifications.

Pharmacy assistant is another occupation that offers multiple pathways through apprenticeship. The occupation is a time-based program requiring 2,000 hours of work experience and training. However, there are other related pharmacy support occupations that provide certifications based on fewer hours or that are competency-based. It should be noted however, that these occupations do not offer the highest wages. The 2006 mean annual wages for pharmacy technicians was $26,510 per year and for home healthcare aids $20,100 per year. This compares with the mean annual income for all occupations of $39,160.

Another occupation that is on the top 25 apprenticeship occupations and is expected to increase by large numbers is child care workers. Child care development is an apprenticeable occupation and requires 4,000 hours of work experience and training for certification, making it the equivalent of a two-year apprenticeship program. Child care workers in 2006 had a mean salary of $18,820.

There are a number of other occupations that are projected to be in demand and that are apprenticeship occupations. These include cooks, automotive service technicians and mechanics, legal secretaries, and licensed practical nurses. Within the medical service field, one of the high-growth industries, there are multiple pathways to certification through apprenticeship. A certified nursing assistant apprenticeship is a 6,000 hour (or three-year) program, but there are four interim certification levels, each of which requires only 1,000 hours of training and experience. Nursing assistants (not certified) can receive their apprenticeship credential after 2,000 hours of training and experience, and may receive two other interim levels of certification, based on 600 hours or less of training and experience. In May 2006, medical assistants, including nursing assistants, earned $26,980 in mean annual wages. A more complete list of high-growth jobs is located in Appendix D.

VI. Obstacles to Increasing the Participation of Youth with Disabilities in Apprenticeship Programs and Possible Strategies to Overcome Them

Apprenticeship has always faced challenges expanding into programs beyond the building and construction trades. Accordingly, many of the obstacles to increasing participation of youth with disabilities in apprenticeship transcend all population groups. There are ways and opportunities to address these obstacles, although the reality remains that overcoming all of them is a difficult task. A targeted agenda with specific strategies may be the best approach for making inroads.

Obstacle 1: Apprenticeship is mostly an adult program, limiting opportunities for any youth to enter registered apprenticeship programs.

Strategies

While apprenticeship programs are oriented towards adults, there is sufficient evidence that there are opportunities for older youth in apprenticeship. The gateway to

these opportunities for many youth with disabilities often comes through programs that have direct connections to apprenticeship, such as school-to-apprenticeship, youth apprenticeship, and pre-apprenticeship programs. Another approach that was adopted by the St. Louis Carpenters' program was to enter into agreements with six area vocational/technical schools in Missouri and Illinois that provide credit towards apprenticeship for students that successfully complete high school and enter an apprenticeship program.

In addition, programs such as YouthBuild and Job Corps offer training in a number of apprenticeship occupations and provide certification that can be useful when applying for jobs. But these programs, with a few notable exceptions, have limited connections directly into apprenticeship. Job Corps has taken action to emphasize placement of Job Corps graduates into registered apprenticeship. ETA's Youth Office is working with OA to build better bridges between YouthBuild programs and registered apprenticeship. Nonetheless, it may require ETA (for YouthBuild) and the Job Corps office to be more proactive in terms of direct linkages between these programs and registered apprenticeship. Both Job Corps and YouthBuild Federal program administrators might consider ultimately requiring individual program sites to set goals around placements in registered apprenticeship and around forming partnerships with apprenticeship program sponsors. Included among these goals could be a focus on including youth with disabilities. This could be done on a test basis with selected sites to see whether this action is likely to produce the intended results.

ODEP should also work with the Federal staff in DOL to secure better data on outcomes for youth with disabilities that participate in YouthBuild and Job Corps programs. Such data is essential for ODEP in developing policies and strategies. Job Corps already places considerable emphasis on youth with disabilities. It would be worthwhile to work with the national Job Corps staff to better understand the results of this focus. Pertinent issues include: 1) the percentage of youth with disabilities that participate in Job Corps programs; 2) their success rate in terms of completion and placement; and, 3) the percentage of youth that are ultimately placed in apprenticeship programs that have a disability. There may be opportunities to increase the participation

rate of youth with disabilities in Job Corps and improve the success rate for these students.

Similarly, there now appears to be interest on the part of ETA in focusing more on disabilities within YouthBuild. This may also present opportunities for ODEP. The benefits from these efforts, however, will likely come from increased career exposure to the building and construction trades rather than as a direct gateway to apprenticeship.

Another possibility is to specifically target existing pre-apprenticeship, youth apprenticeship, and school-to-apprenticeship programs to increase awareness around serving youth with disabilities and to dispel many of the myths that surround this population. These efforts could be even more targeted to those states that have the most programs and to organizations that operate pre-apprenticeship programs, such as HBI.

Obstacle 2: ***While most apprenticeship opportunities exist in the construction trades, little effort is directed to encouraging youth with disabilities to consider careers in construction or to overcome the perception on the part of construction employers that youth with disabilities are not able to perform the job.***

Strategies

Encouraging young people and their parents to consider employment in the trades is often difficult. Today's culture is moving towards placing all youth into post-secondary education, particularly four-year degree programs. The St. Louis Carpenters Joint Apprenticeship Program has attempted to broadly address this by forming partnerships with area high schools. As part of its activities, the Carpenters program participates in career days and job fairs in an effort to interest young people in the carpentry trade. John Gaal, the program director, indicated that they participate in about 160 career days at high schools each year.

Career Voyages, the DOL-sponsored web site on careers for young people, publishes a considerable amount of information on apprenticeship, especially in emerging industries. This site is useful for teaching both students and parents about apprenticeship and careers in apprenticeable occupations, but does not promote resources for youth with disabilities. It would be useful to develop materials that target this audience and then explore ways to reach young people with disabilities and their parents.

The bigger issue in improving employment opportunities in apprenticeship for youth with disabilities lies with the employers, who possess as much responsibility as the apprentice. Enhancing employer participation with youth with disabilities will be an especially daunting challenge in the building and construction trades. Targeted outreach to program sponsors may produce some results. OA maintains a list of all of its program sponsors and it may be feasible to use some of the existing employer materials as part of an outreach to employers. Including "success stories" of youth in these materials would be encouraging. Any such outreach campaign would need to be conducted jointly by OA and SAA staff.

Obstacle 3: ***The apprenticeship system is not widely understood. Organizations that typically work with individuals with disabilities are likely unaware of the potential that exists for creating apprenticeship programs with employers, such as the one in Washington State, and supporting individuals in apprenticeship programs.***

Strategies

Part of this task order will be the development of a toolkit for apprenticeship, which may include fact sheets for disability-serving organizations on apprenticeship. OA has already developed a number of informational brochures on apprenticeship that would serve this purpose. One state, New Mexico, developed a best practices manual on developing apprenticeships and serving people with disabilities. Although it is no longer available on the Internet, guides such as this, which was funded by the state's Division of Vocational Rehabilitation Services, could be useful for engaging disability-serving organizations.

The bigger issue is in dissemination, and in this regard ODEP can easily add value. ODEP already has relationships across Federal agencies. As part of its intergovernmental work, ODEP could include a focus on apprenticeship. OA staff might be willing to make one or more presentations before these intergovernmental gatherings to promote and help other Federal agencies better understand apprenticeship.

Ultimately, though, it is important that these efforts reach down to the local level. Local disability service providers need to know about apprenticeship as an option for their clients. Partnerships between local service providers and apprenticeship program

sponsors offer the best opportunity for placing individuals with disabilities into apprenticeship.

Obstacle 4: Apprenticeship programs can be costly to operate and, outside of the building and construction trades, the financial incentives for employers to develop and operate apprenticeship programs are limited or nonexistent.

Strategies

OA has published a brochure, shown in Appendix F, which provides information on funding resources for registered apprenticeship programs and financial aid for apprentices. It includes both Federal and state resources, some of which are general grants sources and others that are apprenticeship specific. It should be noted, however, that none of the resources are specific to people with disabilities. ODEP therefore may want to work with OA to develop a supplement to the brochure that focuses on resources that are available for individuals with disabilities. Like the current brochure, it could include resources that are available to apprenticeship program sponsors as well as individual apprentices. In addition, the toolkit should include information on how local service providers, including those that work with individuals with disabilities, can help defray the cost of apprenticeship for their clients.

As noted earlier in the paper, ETA awards discretionary grants that have components that focus on apprenticeship. It may be worthwhile to systematically identify these grants. ODEP could then offer to provide technical assistance and support to insure that individuals with disabilities are included among the individuals served.

Obstacle 5: While the Federal and state agencies are the registrant for apprenticeship programs, individual employers make the decisions around hiring.

Strategies

As emphasized throughout this paper, apprenticeship is first and foremost a job. Program sponsors who participate in registered apprenticeship must agree to comply with Federal regulations around equal employment opportunity. These regulations apply to program sponsors with five or more apprentices at any given time, and prohibit discrimination on the basis of race, color, religion, nation origin, and sex. The regulations also require the program sponsors to be proactive around affirmative action.

There are no special rules that apply to apprenticeship for people with disabilities. Accordingly, the only specific rules that apply are the same disability employment laws that apply to any employer.

As OA maintains a list of all current program sponsors, ODEP should consider targeting outreach to these employers and providing them with the materials that ODEP uses with employers in general. OA is revamping its web site, and ODEP could work with OA to include materials dispelling myths and providing information on accommodations for individuals with disabilities. Another option would be developing and conducting briefings with audiences that include apprenticeship program sponsors and the Federal and state agency staff that administer apprenticeship programs. While the regulatory staff does not make hiring decisions, they do have interactions with the program sponsors, and could be encouraged to promote hiring of more youth with disabilities and help dissuade many of the common misconceptions around employment of people with disabilities. Also, ODEP should consider working with OA to arrange a briefing for the Advisory Committee on Apprenticeship. This Committee in its advisory capacity does influence policy and practice throughout the apprenticeship system.

ETA's emphasis on integrating apprenticeship into the workforce system and the One-Stop Career Centers may present opportunities for placement of more youth with disabilities into apprenticeship programs. This is a fairly new initiative and it is not clear how successful the One-Stop Centers will be in promoting apprenticeship and facilitating placements of individuals into apprenticeship programs. Over time, models of practice may develop that can serve as examples for One-Stop Centers across the country. ODEP may wish to work with ETA to encourage, support, and publicize selected One-Stop Career Centers that are proactive around connecting with apprenticeship programs and are effective in including individuals with disabilities in their efforts.

Obstacle 6: Apprenticeships outside the construction trades do offer new opportunities for all youth, including youth with disabilities; however, the numbers of such programs and apprentices are fairly small when compared to the building and construction trades.

Strategies

ETA's OA has had some success in promoting apprenticeship programs outside the building and construction trades. OA provided initial funding to help stimulate the

growth of new apprenticeship programs. There are many additional occupations, particularly those in high demand, where efforts could be directed towards encouraging employers and groups of employers to establish apprenticeship programs. ODEP currently has relationships with CVS Caremark and the American Culinary Federation. The American Culinary Federation has a long history in apprenticeship (see Appendix E). Both of these could be targeted to include more youth with disabilities in their programs.

Any effort towards expanding apprenticeship programs would need to be a joint effort with the OA and SAAs. ODEP can work with these partners to develop a plan identifying occupations to target and organizations that should be involved. Occupations such as cook, pharmacy technician, and healthcare assistants may offer promise. These occupations all have career lattice potential and interim certifications. However, as OA has found in the past it may take some financial support to help defray the costs of establishing apprenticeship programs and operating them for a period of time until this approach is proven to contribute to employers' success in hiring, training, and retaining workers.

Obstacle 7: There is no identifiable system of professional development for the on-the-job instructors. Thus, there are no apparent avenues for providing training in working with youth and particularly youth with disabilities.

Strategies

The extent to which journey level workers, who are on-the-job instructors, receive any instruction in working with young people and people with disabilities is unknown. Any such training would likely be offered as a part of supervisory training that an employer provides to its workers. A safe assumption, however, is that this type of training is not widely available, if at all. Many journey level workers do receive training, but it is usually related to updating their own skills. Given the nature of apprenticeship, the provision of journey level training is the employer's (or employer and union) responsibility, with the government having a very limited role, if any.

Feeder programs into apprenticeship, particularly the school-to-apprenticeship, pre-apprenticeship and youth apprenticeship programs provide some opportunity for training on-the-job instructors. The work-based learned component of these programs is usually closely connected to the school component. This connection provides the avenue

for school personnel to work closely with the employers in making sure that students succeed on the job.

One option might be for ODEP and OA to jointly disseminate materials to program sponsors to increase awareness and provide information around accommodations and support for people with disabilities. There are already many materials available, and there is a centralized list of program sponsors. The tip sheets and guides distributed to program sponsors should include materials that are clearly intended for the on-the-job instructor.

VII. Final Thoughts and Suggestions

Apprenticeships offer tangible employment opportunities for young people because, unlike many jobs, training is an integral aspect of the employment. Apprenticeships, by definition, are in skilled occupations, leading to a credential recognized by employers. At present, registered apprenticeship is a relatively small program with approximately 500,000 apprentices nationwide, compared to a civilian labor force approaching 150 million workers. Nonetheless, apprenticeship is a viable and quality approach to training that should be considered as part of ODEP's overall strategy for improving transition and employment outcomes for youth with disabilities.

Neither ODEP nor OA have sufficient staff to fully address the multiple barriers that exist to expanding apprenticeship opportunities for young people, including those with disabilities. Still, carefully constructed and targeted strategies could produce substantive results. Our recommendation is that ODEP focus on a few of the emerging in demand occupations (such as those in the culinary arts, pharmacies, and medical fields) that offer career lattice opportunities, and whose focus include not only youth with disabilities, but adults as well. ODEP's relationships with CVS Caremark and the American Culinary Federation are two good connections with numerous expansion opportunities. In addition, by working with OA, it might be possible to partner with a large multi-state healthcare employer or association that is interested in establishing apprenticeship programs in these high demand occupations for which there is a shortage of workers.

This does not mean that the traditional apprenticeship occupations should be ignored. Opportunity appears to exist in the pre-apprenticeship, school-to-apprenticeship, and youth apprenticeship programs in particular for youth with disabilities. A strategic outreach campaign conducted in specific states with a large number of programs and targeted to organizations that operate in different states should be considered. Expanding opportunities in apprenticeship will require all those involved to come together and work collaboratively. This should be a comfortable role for ODEP as it is within their mission and how they have operated to date.

Service providers that target individuals with disabilities, such as Vocational Rehabilitation, and those that focus on youth, including youth with disabilities, such as YouthBuild and Job Corps are potentially good feeder programs into apprenticeship. However, registered apprenticeship is not widely understood by many service providers, particularly those that work with individuals with disabilities. A toolkit of materials about registered apprenticeship could be very useful for this audience. ODEP should consider working with appropriate Federal agencies to disseminate the toolkit. In addition, ODEP should also consider a pilot project to evaluate the usefulness of the toolkit, to explore the potential for placing young people with disabilities in apprenticeship, and to identify promising examples of practice. This project should include appropriate Federal agencies, state and local agencies, and local service providers. Information learned from this project can help inform future policy and directions around apprenticeship and individuals with disabilities.

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Appendix A: Complete List of Apprenticeable Occupations in the U.S.

This section identifies all of the more than 900 occupations that may be learned under the apprenticeship model in the United States. The occupations are grouped according to industry sector, and the asterisk (*) indicates an "***in demand***" occupation according to the O*Net database. The number adjacent to each occupation represents the approximate number of years necessary to complete training as an apprentice.

Specific codes, which appear throughout the list, specify the type of training that the occupation requires. If no code is given, the occupation follows the traditional time-based apprenticeship model.

Explanation of codes:

CB=Competency based training

HY=Hybrid training approach

TB/HY=This occupation can be learned using either a time-based or hybrid model.

Arts

Actor 2
Audio operator 2
Bank-note designer 5
Camera operator 3
Cartoonist, motion pictures 3
Cloth designer 4
Commercial designer 4
Decorator 4
Director, television 2
Display designer 4
*Displayer, merchandise 1
Electronic prepress system operator (desktop publisher) 5
Field engineer, radio and television 4
Film or videotape editor 4
Floral designer 1
Fur designer 4
Furniture designer 4
Graphic designer 1.5
Illustrator 4
Industrial designer 4
Interior designer 2
Light technician 4
Mailer 4
Painter 1
Painter, hand (any industry) 3
Photographer, lithographic 5
Photographer, photoengraving 6
Photographer, still 3
Program assistant 3
Radio station operator 4
Recording engineer 2
Script supervisor 1
Sound mixer 4
Stage technician 3
Stained glass artist 4
Taxidermist 3
Transportation clerk 1.5
Wardrobe supervisor 2

Business and administrative support

Alarm operator 1
Dispatcher, service 2
*Equal opportunity representatives, military 1 (CB)
*Financial management 1 (CB)
Funeral director 2
Hotel associate 2
*Legal secretary 1
Manager, food service 3
Manager, household 2
Manager, retail store 3
Material coordinator 2
Medical secretary 1
*Office manager/administrative services 2
*Paralegal 3
Personnel systems management 1 (CB)
Photocomposing-perforating-machine operator 2
Post-office clerk 2
Production controller 2 (CB)
Purchasing agent 4
Salesperson, parts 2
Supercargo 2
Telecommunicator (police, fire, and ambulance dispatcher) 4
Telegraphic-typewriter operator 3
*Teller, financial 1
Word processors and typists 1 (CB)

Construction and mining
Acoustical carpenter 4
Architectural coatings finisher 3
Asphalt-paving-machine operator 3
Assembler, metal building 2
Boatbuilder, wood 4
Boilerhouse mechanic 3
Boilermaker fitter 4
Boilermaker I 3
Boilermaker II 3
Bricklayer, brick and tile 4
Bricklayer, construction 3
Bricklayer, firebrick and refractory tile 4
Carpenter 4
Carpenter, acoustical specialist 3 (HY)
Carpenter, interior systems 4 TB/HY)
Carpenter, maintenance 4
Carpenter, mold 6
Carpenter, piledriver 4
Carpenter, residential specialist 2-3 (HY)
Carpenter, rough 4
Carpenter, ship 4
Carpet layer 3
Casket assembler 3
Cement mason 2
Chimney repairer 1
Construction craft laborer 2 (TB/HY)
Construction driver 4
Coppersmith (ship and boat) 4
Cork insulator, refrigeration 4
Drilling-machine operator 3
Dry-wall applicator 2
*Electrician 4
Electrician, ship and boat 4
Elevating-grader operator 2
Elevator constructor 4
Elevator repairer 4
Fence erector 3
Floor layer 3 (TB/HY)
Floor-covering layer 3
Form builder, construction 2 (TB/HY)
Gas-main fitter 4
Gauger 2
Glazier 3
Glazier, stained glass 4
Hazardous-waste-material technician 2
Inspector, building 3
Insulation worker 4
Joiner, ship and boat 4
Lather 3
*Maintenance tech, municipal 2
Marble finisher 2 (TB/HY)
Marble setter 3
Marble setter 2-4 (HY)
Mine inspector (government) coal 4
Mine inspector (government) metal and nonmetal 4
Miner I (mine and quarry) 1
Monument setter 4
Mosaic worker 3
Mosaic worker 2-4 (HY)
Motor-grader operator 3
Multi-story window installer or builder 3
Munitions systems 1 (CB)
Neon-sign servicer 4
Operating engineer 3
Operating engineer, specialty 3 (HY)
Ornamental-iron worker 3
Ornamental ironworker/architect 4 (HY)
Painter, construction 3
Painter, shipyard 3
Paperhanger 2
Pavement striper 2
Pipe coverer and insulator 4
Pipefitter (construction) 4
Pipefitter (ship and boat) 4
*Pipefitter and steam fitter 4
Plasterer 2
Plasterer 2-4 (HY)
Plumber 4
*Point cleaner, caulker 2-4 (HY)
Prop maker 4
Prospecting driller 2
Protective-signal installer 4
Protective-signal repairer 3
Reinforcing ironworker, concrete 4 (HY)
Reinforcing-metal worker 3
Residential carpenter 2
Residential wireperson 2.4
Roofer 2
Sheet-metal worker 4 (TB/HY)
Shipwright 4
Sign erector I 3
Soft-tile setter 3
Steam service inspector 4
Stonemason 3 (TB/HY)
Street-light servicer 4
Structural ironworker 3-4 (HY)
Structural-steel worker 3
Structural steel/ironworker 3-4 (HY)

Tank setter (petroleum) 2
Taper 2
Terrazzo finisher 2 (TB/HY)
Terrazzo worker 3 (TB/HY)
Tile finisher 2 (TB/HY)
Tile setter 3 (TB/HY)
Tuckpointer, cleaner, caulker 3
Well-drill operator 4

Installation, maintenance, and repair, including telecommunications and power plant operation

Communications equipment
Automatic-equipment technician 4
Central-office installer 4
Central-office repairer 4
Electrician, radio 4
Equipment installer (telecommunications) 4
Maintenance mechanic, telephone 3
Private-branch-exchange installer 4
Private-branch-exchange repairer 4
Radio mechanic 3
Sound technician 3
Station installer and repairer 4
Submarine cable equipment technician 2
Telecommunications technician 4

Electronic equipment
Aircraft mechanic, electrical 4
Audio-video repairer 2
Automotive-generator-and-starter repairer 2
Avionics technician 4
Battery repairer 2
Control equipment electric-technician 5
Corrosion-control fitter 4
Electrical instrument repairer 3
Electrical-appliance repairer 3
Electrical-appliance servicer 3
Electrician, aircraft 4
Electrician, automotive 2
Electrician, locomotive 4
Electrician, maintenance 4
Electrician, powerhouse 4
Electrician, substation 3
Electric-meter installer I 4
Electric-meter repairer 4
Electric-motor repairer 4
Electric-tool repairer 4
Electric-track-switch maintainer 4
Electronic systems technician 4
Electronic-organ technician 2
Electronics mechanic 4
Electronic-sales-and-service technician 4
Field service engineer 2
Meteorological equipment repairer 4
Power-transformer repairer 4
Propulsion-motor-and-generator repairer 4
Radio repairer 4
Relay technician 2
Repairer, hand tools 3
Tape-recorder repairer 4
Television-and-radio repairer 4
Transformer repairer 4
Visual imagery intrusion detector 1 (CB)

Industrial machinery
Automated equipment engineer-technician 4
Automotive-maintenance-equipment servicer 4
Aviation support equipment repairer 4
Bakery-machine mechanic 3
Canal-equipment mechanic 2
Composing-room machinist 6
Computer control programmers, turning 2.5 (CB)
Computer control programmers, milling 2.5 (CB)
Computer control programmers, milling & turning 3 (CB)
Conveyor-maintenance mechanic 2
Cooling tower technician 2
Electronic-production-line-maintenance 1
Forge-shop-machine repairer 3
Forming-machine operator 4
Fuel-system-maintenance worker 2
Hydraulic repairer 4
Hydraulic-press servicer 2
Hydroelectric-machinery mechanic 3
Industrial engine technician 4
Industrial machine systems technician 2
Laundry-machine mechanic 3
Machine erector 4
Machine fixer (carpet and rug) 4
Machine fixer (textile) 3
Machine repairer, maintenance 4
Machinist, linotype 4
Maintenance mechanic, any industry 4
Maintenance mechanic, compressed gas 4
Maintenance mechanic, grain and feed 2
Maintenance repairer, building 2
Maintenance repairer, industrial 4
Marine-services technician 3

Millwright 4 (TB/HY)
Overhauler (textile) 2
Pinsetter adjuster, automated 3
Pinsetter mechanic, automatic 2
Pneumatic-tool repairer 4
Pneumatic-tube repairer 2
Powerhouse mechanic 4
Power plant mechanic 1.5
Pump erector (construction) 2
Pump servicer 3
Repairer I, chemical industry 4
Repairer, welding equipment 2
Repairer, welding systems and equipment 3
Rubberizing mechanic 4
Scale mechanic 4
Sewing-machine repairer 3
Stoker erector and servicer 4
Treatment-plant mechanic 3

Line installers
Cable installer-repairer 3
Cable splicer 4
Cable television installer 1
Line erector 3
Line installer-repairer 4
Line maintainer 4
Line repairer 3
Submarine cable technician 2
Trouble shooter II 3

Precision equipment
Aircraft-armament mechanic 4
Aircraft-photographic-equipment 4
Aircraft mechanic, armament 4
Aircraft mechanic and service technician 1 (CB)
Biomedical equipment technician 4
Camera repairer 2
Dental-equipment installer and servicer 3
Electromedical-equipment repairer 2
Fretted-instrument repairer 3
Instrument mechanic, any industry 4
Instrument mechanic, weapon systems 4
Instrument repairer 4
Machinist, motion-picture equipment 2
Photographic equipment technician 3
Photographic-equipment-maintenance technician 3
Piano technician 4
Piano tuner 3
Pipe-organ tuner and repairer 4
Watch repairer 4
Wind-instrument repairer 4

Vehicles
Aircraft mechanic, plumbing and hydraulics 4
Airframe-and-power-plant mechanic 4
Airframe mechanic, 1.5
Automobile air-conditioning mechanic 1
Automobile body repairer 4
Automobile glass installer 2
Automobile mechanic 4
Automobile radiator mechanic 2
Automobile-repair-service estimator 4
Automobile spring repairer, hand 4
Automotive cooling-system diagnoser 2
Automotive repairer, heavy 2
*Automotive specialty technicians 2
Aviation safety equipment technician 4
Brake repairer 2
Car repairer, railroad 4
Carburetor mechanic 4
Construction-equipment mechanic 4
*Diesel mechanic 4
Electrician, water transportation 4
Engine repairer, service 4
Front-end mechanic 4
Fuel-injection servicer 4
Gas-engine repairer 4
Logging-equipment mechanic 4
Machinist, marine engine 4
Mechanic, endless track vehicle 4
*Mechanic, industrial truck 4
Mine-car repairer 2
Motorboat mechanic 3
Motorcycle repairer 3
Outboard-motor mechanic 2
Repairer, recreational vehicle 4
Rocket-engine-component mechanic 4
Rocket-motor mechanic 4
Service mechanic (automobile manufacturing) 2
Small-engine mechanic 2
Tractor mechanic 4

Other
Air and hydronic balancing technician 3
Air-conditioning installer-servicer 3
Cash-register servicer 3
Coin-machine servicer and repairer 3
Dairy-equipment repairer 3
Dictating-transcribing-machine servicer 3

Door-closer mechanic 3
Facilities locator 2
Farm-equipment mechanic I 3
Farm-equipment mechanic II 4
Firer, marine 1
Furnace installer 3
Furnace installer and repairer 4
Gas-appliance servicer 3
Gas-meter mechanic I 3
Gas-regulator repairer 3
Heating-and-air-conditioning installer and servicer 3
Locksmith 4
Lubrication sevicer materials dispatching technician 2
Maintenance mechanic, construction and petroleum 4
Mechanical-unit repairer 4
Meter repairer 3
Office-machine servicer 3
Oil-burner servicer and installer 2
Oil-field equipment mechanic 2
Pneudralic systems mechanic 2.5
Power-saw mechanic 3
*Refrigeration mechanic 3
Refrigeration and air conditioning mechanic 4 (HY)
Refrigeration unit repairer 3
Rigger 3
Rigger (ship and boat building) 2
Safe-and-vault service mechanic 4
Service planner (light, heat) 4 (TB/HY)
Signal maintainer 4
Supervisory control & data acquisition technician 4
Survival equipment (parachute repairer) 1 (CB)

Production

Assembly

Airplane coverer 4
Assembler, aircraft power plant 2
Assembler, aircraft structures 4
Assembler, electromechanical (robotics) 4
Assembler-installer, general 2
Assembly technician 2
Canvas worker 3
Electric-motor assembler and tester 4
Electric-motor, general assembler 2
Electric-motor-and-generator assembler 2
Electric-sign assembler 4
Fabricator-assembler, metal product 4
Fitter (machine shop) 2
Fitter I (any industry) 3
Former, hand (any industry) 2
Glass bender 4
Glass blower 3
Glass blower, laboratory apparatus 4
Glass-blowing-lathe operator 4
Instrument maker 4
Instrument maker and repairer 5
Machine assembler 2
Machine builder 2
Machine builder 4.5 (CB)
Metal fabricator 4
Optical-instrument assembler 2
Plastics fabricator 2
Pottery-machine operator 3
Precision assembler 3
Precision assembler, bench 2
Precision lens grinder 4
Production finisher 2
Production technologist CB
Rubber-stamp maker 4
Ship propeller finisher 3
Wirer, office machines 2

Health

Artificial-glass-eye maker 5
Artificial-plastic-eye maker 5
Blocker and cutter, contact lenses 1
Contour wire specialist, denture 4
Dental ceramist 2
Dental-laboratory technician 3
Finisher, denture 1
Shop optician, benchroom 4
Shop optician, surface room 4

Inspection

Airplane inspector 3
Automobile tester 4
Cable tester (telecommunications) 4
Calibrator (military) 2
Complaint inspector 4
Diesel-engine tester 4
Electric-distribution checker 2
Electric-meter tester 4
Electromechanical inspector 4
Electronics tester 3
Experimental assembler 2
Grader 4
Hydrometer calibrator 2

Metal fabricating inspector 4
Operational test mechanic 3
Outside production inspector 4
Precision inspector 2
Pressure vessel inspector, 1
Quality assurance inspector 3
Quality control inspector 2
Relay tester 4
Rubber tester 4
Safety inspector and technician 3
Set-up and lay-out inspector 4
Testing-and-regulating technician 4
Thermometer tester 1
Trouble locator, test desk 2
X-ray-equipment tester 2

Jewelry
Bench hand, jewelry 2
Bracelet and brooch maker 4
Brilliandeer-lopper (jewelry) 3
Caster, jewelry 2
Chaser (silversmithing) 4
Diamond selector (jewelry) 4
Engine turner, jewelry 2
Gem cutter 3
Jeweler 2
Model maker II, jewelry 4
Mold maker I, jewelry 4
Mold maker II, jewelry 2
Pewter caster 3
Pewter fabricator 4
Pewter finisher 2
Pewterer 2
Silversmith II 3
Solderer, jewelry 3
Stone setter 4
Stonecutter, hand 3

Metal and plastic work
Blacksmith 4
Card grinder 4
Caster 2
Coremaker 4
Cupola tender 3
Cylinder grinder 5
Die finisher 4
Die maker, bench, stamping 4
Die maker, jewelry and silver 4
Die maker, paper goods 4
Die maker, stamping 3
Die maker, trim 4
Die maker, wire drawing 3
Die polisher 1
Die setter 2
Die sinker 4
Engine-lathe set-up operator 2
Engine-lathe set-up operator, tool 2
Experimental mechanic 4
Extruder operator 1
Fastener technologist 3
Fixture maker 2
Forging-press operator I 1
Four-slide-machine setter 2
Furnace operator 4
Gear hobber set-up operator 4
Gear-cutting-machine set-up operator 3
Gear-cutting-machine set-up operator, tool 3
Grinder I (clock and watch) 4
Grinder operator, tool 4
Grinder set-up operator, jig 4
Grinder set-up operator, universal 4
Gunsmith 4
Heat treater I 4
Heavy forger 4
Injection-molding-machine operator 1
Lay-out technician 4
Lay-out worker I 4
Lead burner 4
Machine operator I 1
Machine setter, any industry 4
Machine setter, clock 4
Machine setter, machine shop 3
Machine set-up operator 2
Machine try-out setter 4
Machinist 2.5
Machinist 4
Machinist, automotive 4
Machinist, experimental 4
Machinist, outside (ship) 4
Maintenance machinist 4
Milling-machine set-up operator 2
Multi-operation form machine setter 4
Multi-operation-machine operator 3
Numerical control machine operator 4
Ornamental metal worker 4
Pantograph-machine set-up operator 2
Patternmaker, all around 5
Patternmaker, metal 5
Patternmaker, metal, bench 5
Patternmaker, metal products 4

Patternmaker, plastics 3
Plastic fixture builder 4
Plastic process technician 4
Plastic tool maker 4
Plater 3
Roll-threader operator 1
Sample maker, appliances 4
Saw filer 4
Saw maker, cutlery and tools 3
Screw-machine operator, multiple spindle 4
Screw-machine operator, single spinner 3
Screw-machine set-up operator 4
Screw-machine set-up operator, single spindle 3
Shipfitter 4
Spinner, hand 3
Spring coiling machine setter 4
Spring maker 4
Spring-manufacturing set-up technician 4
Stone polisher, machine 3
Tap-and-die-maker technician 4
Template maker 4
Template maker, extrusion die 4
Test technician (machining) 5
Tool builder 4
Tool grinder I 3
Tool maker 4
Tool maker, bench 4
Tool programmer, numerical control 3
Tool-and-die maker 4
Tool-grinder operator 4
Tool-machine set-up operator 3
Turret-lathe set-up operator 4
Welder, arc 4
Welder, combination 3
Welder-fitter 4
Welding-machine operator, arc 3

Molds and models, except jewelry
Cell maker 1
Engineering model maker 4
Mock-up builder 4
Model and mold maker (brick) 2
Model and mold maker, plaster 4
Model builder, furniture 2
Model maker pottery and porcelain 2
Model maker, aircraft 4
Model maker, auto manufacturing 4
Model maker, clock and watch 4
Model maker, firearms 4
Model maker, wood 4
Mold maker, die-casting and plastic 4
Mold maker, pottery and porcelain 3
Mold setter 1
Molder 4
Molder, pattern (foundry) 4
Patternmaker, plaster 3
Patternmaker, stonework 4
Patternmaker, wood 5
Plaster-pattern caster 5
Prototype model maker 4

Plant and system operation
Boiler operator 4
Chemical operator, chief 3
Clarifying-plant operator, textile 1
Electronics utility worker 4
Gas utility worker 2
Hydroelectric-station operator 3
Load dispatcher 4
Plant operator 3
Plant operator, furnace 4
Power-plant operator 4
Refinery operator 3
Stationary engineer 4
Substation operator 4
Switchboard operator, utilities 3
Turbine operator 4
Waste-treatment operator 2
Wastewater-treatment-plant operator 2
Water-treatment-plant operator 3

Printing
Assistant press operator 2
Auger press operator, manual control 2
Ben-day artist 6
Bindery worker 4
Bindery-machine setter 4
Bookbinder 5
Casing-in-line setter 4
Colorist, photography 2
Compositor 4
Cylinder-press operator 4
Dot etcher 5
Electrotyper 5
Embosser 2
Embossing-press operator 4
Engraver glass 2
Engraver I 5
Engraver, block 4

Engraver, hand, hard metals 4
Engraver, hand, soft metals 4
Engraver, machine 4
Engraver, pantograph I 4
Engraver, picture 10
Engraving press operator 3
Etcher, hand 5
Etcher, photoengraving 4
Film developer 3
Film laboratory technician 3
Film laboratory technician I 3
Folding-machine operator 2
Job printer 4
Letterer (professional and kindred) 2
Linotype operator 5
Lithograph press operator 0.5-2 (CB)
Lithographic platemaker 4
Lithograph-press operator, tin 4
Machine set-up operator, paper goods 4
Monotype-keyboard operator 3
Offset-press operator I 4
Paste-up artist 3
Photoengraver 5
Photoengraving finisher 5
Photoengraving printer 5
Photoengraving proofer 5
Photograph retoucher 3
Photographic-plate maker 4
Plate finisher 6
Platen-press operator 4
Press operator, heavy duty 4
Press setup operator, stamping 2 (CB)
Printer, plastic 4
Printer-slotter operator 4
Projection printer 4
Proof-press operator 5
Proofsheet corrector 4
Recovery operator (paper) 1
Reproduction technician 1
Retoucher, photoengraving 5
Roller engraver, hand 2
Rotogravure-press operator 4
Scanner operator 2
Sign writer, hand 1
Sketch maker I 5
Sketch maker II 4
Steel-die printer 4
Stereotyper 6
Stripper 5
Stripper, lithographic II 4
Surface-plate finisher 2
Wallpaper printer I 4
Web-press operator 4

Textiles and apparel
Alteration tailor 2
Automobile upholsterer 3
Bootmaker, hand 1
Card cutter, jacquard 4
Carpet cutter (retail trade) 1
Custom tailor 4
Design and patternmaker, shoe 2
Dressmaker 4
Dry cleaner 3
Fur cutter 2
Fur finisher 2
Furniture upholsterer 4
Furrier 4
Harness maker 3
Jacquard-loom weaver 4
Jacquard-plate maker 1
Knitter mechanic 4
Knitting-machine fixer 4
Leather stamper 1
Loom fixer 3
Patternmaker, textiles 3
Saddle maker 2
Sample stitcher 4
Shoe repairer 3
Shoemaker, custom 3
Shop tailor 4
Silk-screen cutter 3
Upholsterer 2
Upholsterer, inside 3
Wire weaver, cloth 4

Woodwork
Accordion maker 4
Cabinetmaker 4
Carver, hand 4
Furniture finisher 3
Harpsichord maker 2
Hat-block maker (woodwork) 3
Head sawyer 3
Jig builder (wood contain) 2
Last-model maker 4
Loft worker (ship and boat) 4
Machine setter, woodwork 4
Machinist, wood 4
Pipe organ builder 3

Pony edger (sawmill) 2
Violin maker, hand 4
Wood-turning-lathe operator 1

Other
Batch-and-furnace operator 4
Chemical operator III 3
Coating machine operator I 1
Cutter, machine 3
Decorator (glass manufacturing) 4
Electrostatic powder coating technician 4
Envelope-folding-machine adjuster 3
*Fiberglass laminators and fabricators 2
Fourdrinier-machine operator 3
Freezer operator 1
Gang sawyer, stone 2
Hydro-blaster/vacuum technician 2
Kiln firer 3
Kiln operator 3
Liner (pottery and porcelain) 3
Miller, wet process 3
Painter, sign 4
Painter, transportation equipment 3
Purification machine operator II 4
Sandblaster, stone 3
Screen printer 2
Siderographer 5
Stencil cutter 2
Stone carver 3
Stone-lathe operator 3
Tinter (paint and varnish) 2
Wire sawyer 2

Science, drafting, and computer
*Biological Technicians 1 (CB)
Calibration laboratory technician 4
Chemical laboratory technician 4
Chemical-engineering technician 4
Chief of the party 4
Computer operator 3
Computer programmer 2
Computer-peripheral-equipment operator 1
*Computer security specialist 3 (CB)
*Computer systems analyst 1 (CB)
Dairy technologist 4
Design drafter, electromechanism 4
Detailer 4
Die designer 4
Drafter, architectural 4
Drafter, automotive design 4
Drafter, automotive design layout 4
Drafter, cartographic 4
Drafter, civil 4
Drafter, commercial 4
Drafter, detail 4
Drafter, electrical 4
Drafter, electronic 4
Drafter, heating and ventilating 4
Drafter, landscape 4
Drafter, marine 4
Drafter, mechanical 4
Drafter, plumbing 4
Drafter, structural 3
Drafter, tool design 4
Electrical technician 4
Electromechanical technician (robotics) 3
Electronics technician 4
Engineering assistant, mechanical equipment 4
Environmental analyst 3.5
Estimator and drafter 4
Foundry metallurgist 4
Geodetic computator 2
*Geospatial specialist 2 (CB)
Heat-transfer technician 4
Horticulturist 3
*Industrial engineering technician 4
Information technology generalist 1.5 (CB)
*Information technology project manager 3 (CB)
Instrument technician, utilities 4
Instrumentation technician 4
Internetworking technician 2.5
Laboratory assistant 3
Laboratory assistant, metallurgy 2
Laboratory technician 1
Laboratory tester 2
Logistics engineer 4
Materials engineer 5
Mechanical-engineering technician 4
Meteorologist 3
Mold designer (plastics industry) 2
Nondestructive tester 1
Nondestructive tester 2[+additional for specialty] (CB)
Optomechanical technician 4
Photogrammetric technician 3
Programmer, engineering and science 4
Quality control technician 2
Radiation monitor 4
Radiographer 4
Research mechanic, aircraft 4
Soil-conservation technician 3

Surveyor assistant, instruments 2
Test equipment mechanic 5
Test-engine operator, geologic samples 2
Tester, geologic samples 3
Tool design checker 4
Tool designer 4
Weather observer 2
Welding technician 4
Wind tunnel mechanic 4

Service and related

Buildings and grounds

Agricultural service worker 2
Exterminator, termite 2
Facility manager 2 (CB)
Greenskeeper II 2
Housekeeper 1
Landscape gardener 4
Landscape management technician 1
Landscape technician 2
Rug cleaner, hand 1
Swimming-pool servicer 2
Tree surgeon 3
Tree trimmer (line clear) 2

Cooking

Baker 3
Baker, hotel and restaurant 3
Baker, pizza 1
Bartender 1
Butcher, all-round 3
Butcher, hotel and restaurant 3
Candy maker 3
Cheesemaker 2
Cook, any industry 2
Cook, chief, water transportation 2
Cook, hotel and restaurant 3 (TB/HY)
Cook, pastry 3 (TB/HY)
Meat cutter 3
Wine maker 2

Protective service

Arson and bomb investigator 2
Correction officer 1
Fire apparatus engineer 3
Fire captain 3
Fire department training officer 2
Fire engineer 1
Fire inspector 4
Fire medic 3
Firefighter 3
Firefighter, crash and fire 1
Firefighter, diver 3.5
Firefighter, paramedic 4
Fire Marshall 2
Fire prevention officer 2
Fire suppression technician 2
Fish and game warden 2
Forensic science technicians 2 (CB)
Guard, security 1.5 (HY)
Investigator, private 1
Police officer 2
Wildland firefighter specialist 1

Health

Ambulance attendant (EMT) 1
Dental assistant 1
Emergency medical technician 3
Health care sanitation technician 1
*Health support specialist 2.5 + time for specialty (HY)
Health unit coordinator 1
*Home health aide 1 (CB)
*Home health aide specialty (disability, hospice, mental illness, demential, mentor, geriatric) additional 4 mos. (CB)
*Home health director 1 (CB)
Licensed practical nurse 1
*LTC nurse management 0.5 (CB)
Magnetic resonance imaging technician 1
Mammography technologist 1
*Medical assistant 2
*Medical coder 1.5
Medical laboratory technician 2
*Medical transcriptionist 2 (HY)
*Nurse assistant 1
*Nurse assistant certified specialties +0.5 (CB)
*Nursing assistant certified 3 (CB)
Optician, dispensing 2
Optician, goods 4
Optician, goods and retail 5
Orthodontic technician 2
Orthopedic-boot-and-shoe designer 5
Orthotics technician 1
Orthotist 4
Paramedic 2
*Pharmacist assistant 1
*Pharmacy technician 0.5-1 (CB)
Podiatric assistant 2
Prostethetist 4
Prosthetics technician 4

Public Health 1 (CB)
*Radiologic technologists 1
*Surgical technologist 2 (CB)
Tumor registrar 2

Other service
Animal trainer 2
Barber 1
Chaplain service support 1 (CB)
Childcare development specialist 2
Cosmetologist 1
Counselor 2
Customer service representative 3
Direct support specialist (social and human support) 1.5 (CB)
Embalmer 2
Employment interviewers 2 (CB)
Hair stylist (cosmetologist) 1
Horse trainer 1
Horseshoer 2
Public Affairs 1 (CB)
*Senior housing manager 1 (CB)
Teacher aide I 2
Training and development specialist 1 (CB)
Veterinary/lab animal technician 1 (CB)
Youth development practitioner 1.75 (HY)

Other
Airfield operations specialist 1
Air traffic controller (military only) 1 (CB)
Beekeeper 2
Buttermaker 1.2
Command and control center specialist (military) 1 (CB)
Conveyor-system operator 1
Dragline operator 1
Dredge operator 4
E-commerce specialist 3 (CB)
Farmer, general 1
Farmworker, general I 2
Fire-control mechanic 1
Fish hatchery worker 2
Historian 1 (CB)
Inspector, motor vehicles 4
Locomotive engineer 2
Logger, all-round 3
*Mates ship, boat and barge 1.5
Medicaid disability claims adjuster 3
Ordnance artificer (military) 1.5
Pilot, air transport 3 (CB)
Pilot, ship 3
Pumper-gauger 1
Sailors and Marine Oilers 1.5
Truck driver, heavy 3 (TB/HY)
Truck-crane operator 3

Source: Department of Labor Office of Apprenticeship (OA) List of Officially Recognized Apprenticeable Occupations, Revised May 2006

REGISTERED APPRENTICESHIP
Earn. Learn. Succeed.

Apprenticeship Final Rule
Fact Sheet

On October 29, 2008, the U.S. Department of Labor published in the Federal Register a final rule to modernize the National Apprenticeship System. This rule takes effect on December 29, 2008, and provides State Apprenticeship Agencies (SAAs) with up to an additional two years from the effective date to implement necessary changes.

The revised regulations, which incorporate many of the recommendations of the Secretary's Advisory Committee on Apprenticeship (ACA), emphasize the need for a flexible National Apprenticeship System by including options for both program sponsors and apprentices that address the needs of the nation's regional economies and provide for the development of a skilled, competitive workforce.

For more than 70 years, the National Apprenticeship System has provided training to rigorous industry standards in a variety of fields. While registered apprenticeship remains a unique, on-the-job training option that benefits apprentices and employers alike, its future growth and continued success require that it adapt and reflect changes in the American workplace.

For apprentices and program sponsors, the regulations:

- **Incorporate technology-based learning –** By including the use of electronic media in the definition of Related Technical Instruction (RTI), the final rule fully supports technology-based and distance learning.

- **Provide additional pathways to certification –** The final rule specifies that program sponsors may offer three different ways for apprentices to complete a registered apprenticeship program:

    - Traditional, time-based approach, which requires the apprentice to complete a specific number of on-the-job (OJT) and RTI hours;
    - Competency-based approach, which requires the apprentice to demonstrate competency in the defined subject areas and requires OJT and RTI; and
    - Hybrid approach, which requires the apprentice to complete a minimum number of OJT and RTI hours and demonstrate competency in the defined subject areas.

- **Introduce interim credentials –** The final rule provides registration agencies with the option to issue official interim credentials, which offer incentives for apprentices to complete their programs and continue their career preparation. Issued as certificates, such credentials will enable apprentices to demonstrate to employers their proficiency in particular required skills and competencies. Interim credentials will be issued only for recognized components of an apprentice's occupation.

- **Improve program registration and review process –** Changes to the regulations establish 90-day timeframes for registration agencies to process sponsor requests for registering and modifying program standards and 45-day timeframes for sponsors to notify registration agencies regarding other employment and apprenticeship agreement changes.

- **Update the reciprocal registration provision –** Previously, apprentices in building and construction programs could work as registered apprentices only in those states where their programs were registered, because the states were not required to accord reciprocal registration or approval to out-of-state building and construction programs. The updated regulations remove this exemption and provide for reciprocal approval, for Federal purposes, of apprentices, apprenticeship programs, and standards that are registered in other states for all industries and occupations. Additionally, to ensure that out-of-state programs do not gain an undue advantage over reciprocal state programs when bidding on a contract, the final rule requires apprenticeship program sponsors seeking reciprocal approval to meet the wage and hour provisions and apprentice ratio standards of the reciprocal state.

- **Introduce provisional registration –** The regulations call for newly registered programs to receive provisional approval for one year to enhance program quality. After one year, programs meeting the regulatory standards may either be permanently approved or have their provisional registration extended through the end of the first training cycle.

<u>For State Apprenticeship Agencies (SAAs), the regulations:</u>

- **Increase linkages with the workforce investment system –** The revised regulations require SAAs requesting DOL recognition to demonstrate linkages and coordination with the state's economic development strategies and public workforce investment system.

- **Redefine the roles and responsibilities of SAAs and State Apprenticeship Councils (SACs) –** In an effort to establish a clear path of accountability between DOL and the state agency that oversees apprenticeship, the regulations grant registration agency recognition solely to SAAs. SACs will continue to be required for advisory or regulatory purposes.

- **Establish a process for continued recognition –** The revised regulations require SAAs to reapply for DOL recognition within two years of the effective date and to reapply every five years thereafter for continued recognition. This change will improve state conformity with Federal requirements and establish consistency across administration and management of the National Registered Apprenticeship system.

- **Increase flexibility for location of an SAA –** The revised regulations give states the flexibility to determine the location of the apprenticeship agency within the state government organizational structure and no longer require that an SAA be housed in a state Department of Labor.

For the U.S. Department of Labor, the regulations:

- **Enhance program accountability –** The updated regulations include a new section on performance standards that support DOL's efforts to demonstrate results and increase program quality. Programs with completion rates below the national average will be provided with technical assistance targeted to improve their performance and improve overall program quality. In addition to completion rates, the revised regulations emphasize the existing practice of using quality assurance assessments and Equal Employment Opportunity Compliance Reviews to evaluate program performance for quality and compliance with program requirements.

- **Ensure national conformity with federal apprenticeship legislation and regulations –** The updated regulations require that recognized states provide the Office of Apprenticeship (OA) with the opportunity to review all potential changes to the state's apprenticeship law so that OA can safeguard conformity with 29 C.F.R. part 29. Such a review process affords an opportunity for an SAA and OA to identify and resolve issues that could potentially affect a state's recognition status before proposals take effect and must be undone to preserve recognition.

Background

In developing the rule, the Department's Employment and Training Administration (ETA) and OA consulted extensively with the Secretary of Labor's Advisory Committee on Apprenticeship (ACA). From September 2005 to May 2006, the ACA's Work Group on Regulations and Competency-Based Training Certification drafted recommendations. In June 2006, the ACA unanimously adopted the recommendations, which became the starting point for ETA's proposed rule.

On December 13, 2007, ETA published a Notice of Proposed Rulemaking (NPRM), soliciting comments from the public on the proposed changes to the existing regulations. The NPRM generated 2,660 responses. DOL carefully considered the suggestions and concerns of commenters and, in many instances, modified the proposed rule to reflect their input.

Appendix C: List of Youth Feeder Programs in the U.S., including School-to-Apprenticeship, Pre-Apprenticeship, and Youth Apprenticeship

School-to-Apprenticeship

School/Program Name	State	District	Website	Details
Matanuska-Sustina (Mat-Su) Registered School-to-Apprenticeship Program	Alaska	Mat-Su Borough school district	http://www.matsuk12.us/1733109311551830/blank/browse.asp?a=383&BMDRN=2000&BCOB=0&c=63533	The registered school-to-apprenticeship training program provides the flexibility to complete high school educational requirements while working part time in a structured, on-the-job training environment. This particular program is a partnership with the Alaska Operating Engineers Local 302 in a tech prep agreement that offers the student the opportunity to apprentice as a heavy equipment operator or mechanic.
Muskegon Area Intermediate School District	Michigan	Muskegon	http://www.muskegonisd.org/ctc-new/careers/placement/	Students participate in an apprenticeship training program while concurrently completing graduation requirements.
Upper Valley Joint Vocational School	Ohio	14 school districts in Shelby and Miami County	http://www.uvjvs.org/	This school combines career technical education and academics for students in their junior and senior years of high school.
Four County Career Center (FCCC)	Ohio	22 Northwest Ohio school districts	http://www.fourcounty.net/about.aspx	FCCC offers 32 programs in four career pathways: arts & communications and business & management; environmental and agricultural systems; health services and human resources services; and industrial and engineering systems.

School/Program Name	State	District	Website	Details
West Shore Career-Technical Education District	Ohio	Bay Village, Lakewood, Rocky River, and Westlake School Districts.	http://www.lkwdpl.org/schools/westshore/about.htm	The goals of the district include infusing technology into the curriculum to meet industry standards, offering a variety of career training opportunities, creating pathways to foster lifelong learning, and developing ties with parents and industries that address the education needs of the community. The school to apprenticeship program is designed to bridge the gap between the local school district and apprenticeship and industry. They maintain a cooperative partnership with the Office of Apprenticeship. Intended outcomes include: employment, transition to 2 or 4 year college or earning an Associate's degree during the last 2 years of high school.
Cuyahoga Valley Career Center (CVCC)	Ohio	Brecksville Broadview, Cuyahoga Heights, Garfield Heights, Independ-ence, Nordonia Hills, North Royalton, Revere, Twinsburg	http://www.cvccworks.com/homepage.aspx	A wide variety of available programs: construction, culinary, drafting/CAD, electronics, HVAC, horticulture, machining, microsystems management, electrician, etc. While enrolled, the student attends the high school in his residential district for academics and travels to CVCC for advanced training. The program design allows the student a smoother transition between the career-technical program and a full apprenticeship position after graduation. Sponsors and apprenticeship employers even provide summer jobs to participants. The graduate receives a high school diploma, career technical certificate, a full time job, and possible credit toward an apprenticeship program. CVCC also offers special education services that focus on particular vocations.

School/Program Name	State	District	Website	Details
Miami Valley Career Technology Center (MVCTC) School-to-Apprenticeship Program	Ohio	Darke, Preble, Miami, Montgomery, Warren Counties	http://www.mvctc.com/	The program offers a wide variety of apprenticeship choices, including early childhood education, health fields, accounting, IT, graphics, and engineering. Furthermore, the program offices guidelines on how other institutions might initiate their own school to apprenticeship program.
Greene County Career Center (GCCC) School to Work Apprenticeship Program	Ohio	Greene County	http://www.greeneccc.com/1737108131554556 3/site/default.asp	A program providing continuing education and work experience for students in vocational education. The student earns credit toward the completion of an apprenticeship, and employment as an apprentice following graduation. They offer high school and adult student programs.
Collins Career Center School-to-Apprenticeship Program	Ohio	Lawrence County (certain high schools)	http://www.collins-cc.k12.oh.us/Guidance/Apprenticeships/index.htm	A program intended to bridge the gap between school vocational programs and existing or potential apprenticeship programs. The partnership between the schools and sponsoring businesses provides continuity of education and work experience for the student.
Associated Builders and Contractors, Ohio Valley Chapter	Ohio	Ohio Valley	http://www.ovabc.org/Education_Training/School_to_Career/School_to_Apprenticeship.aspx	A program that allows students at vocational schools to begin a career in the construction trades while still a high school student.
Pickaway Ross Career and Technical Center	Ohio	Pickaway and Ross Counties	http://www.pickawayross.com/	A career center that maintains partnerships with local high schools.

School/Program Name	State	District	Website	Details
Maplewood Career Center	Ohio	Ravenna	http://www.mwood.cc/	A school-to-apprenticeship program that provides youth the opportunity to become employed with the sponsors following graduation.
Penta Career Center	Ohio	N/A	http://www.pentacareercenter.org	A school that provides real world learning and partnerships with business and industry.
Polaris Career Center	Ohio	Berea, Brooklyn, Fairview, North Olmsted, Olmsted Falls, and Strongsville Districts	http://www.polaris.edu	A career technical program with a focus on preparing high school students to immediately enter the workforce and to earn credit towards a 2- or 4-year college program.
Scioto County Joint Vocational School	Ohio	Scioto County	http://www.scjvs.com/index.html	A career technical school that prepares students, during their last two years of high school, for postsecondary employment, education, or further skills training.
Springfield-Clark Career Center	Ohio	Springfield-Clark County	http://www.springfieldclarkctc.org/index.htm	A skills development and career technical education center for high school and adult students.
Rhode Island Dept. of Labor and Training	Rhode Island	N/A	http://www.dlt.ri.gov/apprenticeship/students.htm	There are registered school-to-apprenticeship programs available in the trades throughout RI. They allow an apprentice to enter the workforce immediately following HS as an apprentice.

Pre-Apprenticeship

School/Program Name	State	District/Region	Website	Details
Cypress Mandela/Women in Skilled Trades (WIST)	California	Bay Area	http://www.cypressmandela.org/	WIST offers a 16-week pre-apprenticeship training program for women and men over 18 years old, and a partnership with local employers.
Century Community Training Program (CCTP)	California	Los Angeles	www.centuryhousing.org/job_placement.htm	CCTP offers pre-apprenticeship building trade construction training for those individuals transitioning from welfare, low-income jobs, incarceration, or unemployment.
RichmondBUILD	California	Richmond	www.ci.richmond.ca.us/index.asp?NID=1243	RichmondBUILD offers a training and job placement program to Richmond city residents through a comprehensive pre-apprenticeship construction skills course.
Northern California Construction Training (NCCT)	California	Sacramento	www.ncct.ws/index.html	The NCCT offers a variety of programs to introduce individuals to the construction trades, including pre-apprenticeship programs.
Work 4 Women	District of Columbia (HQ)	National	www.work4women.org/training/trainingprevocational.cfm	A pre-vocational project sponsored by WOW intended to provide women with the basic skills necessary (i.e., tool identification) to participate in an apprenticeship trade.
Joliet Job Corps	Illinois	Joliet	http://www.willcountyworkforceboard.com/default.asp?contentID=170	Several vocational trades offered at this center have union partnerships that allow pre-apprenticeship training for students.

School/Program Name	State	District/Region	Website	Details
Maine Pre-Apprenticeship Program (MPAP)	Maine	State	http://maine.gov/labor/apprenticeship/pre_apprenticeship/index.htm	Available in a variety of trades throughout the state, Maine's Pre-Apprenticeship Program involves two years of coursework and on-the-job work during the summers that begin with the students' junior year of high school. Upon graduation students matriculate to the Maine Apprenticeship Program.
Construction Skills Pre-Apprenticeship	New York	New York City	http://www.constructionskills.org/pages/pat.html	An initiative within NYC public high schools to prepare students for careers in the building and construction trades. Training involves spring and summer coursework in school; Construction Skills also has a relationship with apprenticeship.
Independent Electrical Contractors of Greater Cincinnati	Ohio	Cincinnati	www.iec-cincy.com/preapp.asp	A union sponsored pre-apprenticeship program that is a week in duration that covers the basics of safety, tool and material identification, etc.
Union Construction Industry Partnership, Apprenticeship Skills Achievement Program (UCIP-ASAP)	Ohio	Cleveland	http://ucipconstruction.com/apprenticeship.htm	A pre-apprenticeship training program that lets students experience the realm of a union apprenticeship first hand.
Oregon Tradeswomen, Inc.	Oregon	Portland	www.tradeswomen.net	A five-week, 3-day per week, class that prepares women for work in the trades, through education, leadership, and mentorship.

School/Program Name	State	District/Region	Website	Details
Oregon Tradeswomen, Inc. (OTI)	Oregon	Portland	www.tradeswomen.net/pathways.html	OTI focuses on introducing young and adult women to careers in construction and preparing them to enter the trades. Participants must be 18+ for the 7-week pre-apprenticeship program.
Portland Community College Trades Preparation Course	Oregon	Portland	www.pcc.edu/programs/apprenticeship/	A 12-week course for participants 18+ offered through Portland Community College to teach the skills necessary to meet the minimum entry qualifications for a trade or apprenticeship program.
Portland YouthBuilders	Oregon	Portland	www.pybpdx.org/construction.htm	A YouthBuild program that provides on-the-job training in the construction trades and completion of a high school diploma or GED.
Curlew Job Corps Vocational Training Center	Washington	Curlew	N/A	Four pre-apprenticeship programs: carpentry, bricklaying/tile setting, painting, laborers. Phone: (800) 733-5627
Apprenticeship and Construction Exploration (ACE)	Washington	Franklin and Cleveland High Schools	N/A	ACE is a partnership between the Seattle School District, Joint Apprenticeship Training Committees, and Seattle Community College. Phone: (206) 605-7043
ANEW (Apprenticeship and Non-Traditional Employment for Men and Women)	Washington	King County	www.anewaop.org	ANEW offers comprehensive training to low income individuals in the form of 12-week courses.

School/Program Name	State	District/Region	Website	Details
Apprenticeship Opportunities Project	Washington	King County	www.anewaop.org/AOP.htm	Operated by ANEW, this program focuses on preparing individuals for apprenticeship programs in construction work.
Job Skills for Trade and Industry	Washington	King County	www.rtc.edu	Students gain skills for apprenticeship or entry-level employment in construction, manufacturing, public utilities, and related industries.
Pre-Apprenticeship Construction Training (PACT)	Washington	Seattle	N/A	The Multiple Trades Program prepares students to enter into any of the construction trade apprenticeships. Strong emphasis is place on basic job skills such as punctuality, perseverance, positive attitude and work ethic. Programs are 660 hours in duration. Phone: (206) 587-4974
Seattle City Light's Pre-Apprenticeship Lineworker	Washington	Seattle	www.seattle.gov/light/apprentice	A paid, six-month training position designed to help employees gain the necessary skills to become lineworker apprentices.
Seattle Vocational Institute (SVI)	Washington	Seattle	http://sviweb.sccd.ctc.edu/p_mta_mta.htm	A 660-hour pre-apprenticeship training course in the construction trades.
Spokane Community College Apprenticeship and Journeymen Training Center Avista	Washington	Spokane	www.scc.spokane.edu/?avista&origurl=tech/apprent/avista.htm	Participants in this pre-apprenticeship program learn the skills and knowledge required of a line crew helper and receive classroom and on-the-job training.

School/Program Name	State	District/Region	Website	Details
Spokane Home Builders Association, Inc., and the Department of Corrections Pre-Apprenticeship and Training Directory	Washington	Spokane	www.shba.com	A pre-apprenticeship carpentry training program that serves as a competency-based education plan that provides inmates a skill for employment upon their release. Students complete a 12-week, 450-hour program.
Pre-Apprenticeship Training Programs at Bates Technical College	Washington	Tacoma	www.bates.ctc.edu	Offers pre-apprenticeship career classes in welding, auto and diesel mechanics, carpentry, etc.
School–to-Apprenticeship Programs "Get Electrified, Frame Your Future, and Cutting Edge Technologies"	Washington	Tacoma	N/A	A pre-apprenticeship training program that employs, prepares, and directly links high school youth to apprenticeship training through classroom and on-the-job training. Phone: (253) 552-2542
School to Career Summer Academy at Bates Technical College	Washington	Tacoma	www.bates.ctc.edu	A summer course with two weeks of college level training and a two-week internship for high school students interested in the building trades and technical fields.

School/Program Name	State	District/Region	Website	Details
Youth Building Tacoma	Washington	Tacoma	N/A	Funded by the City of Tacoma and the Tacoma-Pierce County Employment & Training Consortium, the goal of the project is to assist residents (age 18-24) in obtaining employment and/or career fields. Phone: (253) 593-7377
New Market Vocational Skills Center, Construction Trades Program	Washington	Thurston, Mason, Lewis, Grays Harbor, and Pierce Counties	www.nmvsc.com	The program is a part of the Washington State public school system, and prepares students for a variety of trades in the construction industry.
Puget Sound OIC (Opportunities Industrialization Center)	Washington	Western Washington	N/A	A statewide direct placement program responsible for recruiting individuals to become apprentices or trainees in highway construction jobs. Phone: (800) 963-3277 or (206) 721-6043
Construction Industry Training (CIT) Edmonds Community College	Washington	Lynnwood	http://cit.edcc.edu	Students learn the fundamentals of the industry, receive hands-on skills, and earn certification. Ideal for those who want to be competitive in the entry-level construction marketplace or who are preparing for entry into an apprenticeship training program.

Youth Apprenticeship

School/Program Name	State	District	Website	Details
Fayetteville Public Schools	Arkansas	Fayetteville	http://fayettevilleapprenticeship.org	High school students receive a technical education with on-the-job learning experience and wages from their employers.
Cherokee County Schools	Georgia	Cherokee County	http://www.peggysues.net/index2.html	An educational option that prepares high school students for work through academic courses and workplace learning. Students may receive wages while enrolled in the program during their junior and senior years.
Lamar County Youth Apprenticeship	Georgia	Lamar County	www.lamar.k12.ga.us/webpages/yap/lcyap.htm	Students may participate in this apprenticeship training program during 11th and 12th grades, and will receive paid on-the-job training.
Coastal Plains Regional Educational Service Agency (RESA)	Georgia	Multiple School Districts	www.cpresa.org/	Coastal Plains operates a youth apprenticeship program in various school districts that combines high academics with paid career technical training.
Georgia Department of Education Youth Apprenticeship Program	Georgia	State	www.doe.k12.ga.us/ci_cta.aspx?PageReq=CICTAYouth	A structured combination of school-based and work-based training through a partnership among secondary schools, post-secondary institutions, employers, and community representatives. The training is completed during a student's last two years of high school.
Okefenofee Technical College	Georgia	Waycross	www.okefenokeetech.edu/admissions/hs_stds.asp	Offers a school- and work-based learning program that includes a paid apprenticeship.

School/Program Name	State	District	Website	Details
New Hampshire Department of Labor--Apprenticeships	New Hampshire	State	www.labor.state.nh.us/youth_apprenticeship.asp	The NH DOL was awarded a grant that will provide the opportunity for youths age 16-24 to begin learning an occupation using a system that combines on-the-job training and related instruction. The initial grant period was 1 year.
North Carolina Public Schools	North Carolina	State	http://www.ncpublicschools.org/docs/cte/publications/administrative/apprenticeshiphandbook.pdf	The state has developed guidelines for high-school apprenticeship opportunities that link academics and work-based training with an income for the student.
Great Oaks Career Campuses	Ohio	Diamond, Laurel, Live, Scarlet	http://www.greatoaks.com/Employer-Services.cfm?subpage=258	A youth apprenticeship program directly linked to the formal apprenticeship system, Great Oaks combines high school academics and work experience. Great Oaks also operates a school-to-apprenticeship program.
Youth Apprenticeship Program in Biotechnology	Wisconsin	Dane County	www.btci.org/k12/yap/yap.html	A 10-15 hour/week paid apprenticeship in an industry or lab setting in addition to the students' high school coursework.
Jefferson County School-to-Career Consortium	Wisconsin	Jefferson County	www.fortschools.org/jcstc/homepage.asp	This school district offers youth apprenticeship programs in a variety of trades through the high schools. Students receive a career technical education and a wage appropriate for their field.
Wisconsin Department of Workforce Development	Wisconsin	State	www.dwd.state.wi.us/youthapprenticeship/default.htm	Wisconsin maintains a statewide youth apprenticeship program as part of a school-to-work initiative. It is designed as a two-year elective program for high school students and combines hands-on training with classroom instruction.

School/Program Name	State	District	Website	Details
Wisconsin Technical College System	Wisconsin	State	http://www.wtcsystem.edu/colleges.htm	A comprehensive listing of all Wisconsin technical colleges where graduates of the state's two year youth apprenticeship high school program may receive credit.
Waukesha County Technical College	Wisconsin	Waukesha County	http://www.wctc.edu/programs_&_courses/skilled_trades/apprentice.php	Secondary school students at least 16 years of age are eligible to participate in this program that provides technical training and paid employment. Students graduate with a skills certificate and the possibility of being hired as a full apprenticeship by their employer.
Wisconsin Automotive and Truck Education Association	Wisconsin	Wausau	www.watea.org/youthapprenticeship.htm	A youth apprenticeship program focusing on the automotive trades that provides high school credit and wages at the same time.

NOTE: This information is compiled from an internet search of available School-to-Apprenticeship, Pre-Apprenticeship, and Youth Apprenticeship Programs in the U.S. The U.S. Department of Labor does not endorse any of the programs provided in this Appendix.

Appendix D: High Wage, High-Growth Occupations

The following chart indicates high wage and high-growth occupations as indicated by the Bureau of Labor Statistics. The median annual earnings, as of May 2004, are shown for each occupation. This list includes jobs that are also apprenticeship occupations. Careers that require a Bachelor's degree, a graduate degree, or a professional school degree are not included in this list.

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Cement masons and concrete finishers	$31,400	201	233	32	15.8%	Moderate-term on-the-job training
Roofers	30,840	162	189	27	16.8	Moderate-term on-the-job training
Tile and marble setters	35,410	59	73	14	22.9	Long-term on-the-job training
Paving, surfacing, and tamping equipment operators	29,990	63	73	10	15.6	Moderate-term on-the-job training
Painters, transportation equipment	35,120	53	61	7	14.1	Long-term on-the-job training
Reinforcing iron and rebar workers	35,160	34	38	5	14.1	Long-term on-the-job training
Stonemasons	34,980	22	25	3	13.0	Long-term on-the-job training
Choreographers	33,670	19	22	3	16.8	Work experience in a related occupation
Recreational vehicle service technicians	28,980	13	15	3	19.5	Long-term on-the-job training
Maintenance and repair workers, general	30,710	1,332	1,533	202	15.2	Moderate-term on-the-job training
Carpenters	34,900	1,349	1,535	186	13.8	Long-term on-the-job training
Automotive service technicians and mechanics	32,450	803	929	126	15.7	Postsecondary vocational award
Licensed practical and licensed vocational nurses	33,970	726	850	124	17.1	Postsecondary vocational award
Plumbers, pipefitters, and steamfitters	41,290	499	577	78	15.7	Long-term on the job training
Fire fighters	38,330	282	351	69	24.3	Long-term on-the-job training
Heating, air conditioning, and refrigeration mechanics and installers	36,260	270	321	51	19.0	Long-term on-the-job training
Legal secretaries	36,720	272	319	47	17.4	Post secondary vocational award
First-line supervisors/managers of housekeeping and janitorial workers	29,510	236	281	45	19.0	Work experience in a related occupation

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Bus drivers, transit and intercity	29,730	190	231	41	21.7	Moderate-term on-the-job training
Bus and truck mechanics and diesel engine specialists	35,780	270	309	39	14.4	Postsecondary vocational award
First-line supervisors/managers of personal service workers	30,350	206	244	38	18.3	Work experience in a related occupation
Payroll and timekeeping clerks	30,350	214	251	37	17.3	Moderate-term on-the-job training
First-line supervisors/managers of transportation and material-moving machine and vehicle operators	44,810	288	262	35	15.3	Work experience in a related occupation
First-line supervisors/managers of landscaping, lawn service and groundskeeping workers	35,340	184	217	33	17.8	Work experience in a related occupation
Highway maintenance workers	29,550	143	177	33	23.3	Moderate-term on-the-job training
Surgical technologists	34,010	84	109	25	29.5	Postsecondary vocational award
Chefs and head cooks	30,680	125	146	21	16.7	Work experience in a related occupation
Aircraft mechanics and service technicians	45,290	119	135	16	13.4	Postsecondary vocational award
Water and liquid waste treatment plant and system operators	34,960	94	110	15	16.2	Long-term on-the-job training
Police, fire, and ambulance dispatchers	28,930	95	111	15	15.9	Moderate-term on-the-job training
Civil engineering technicians	38,480	94	107	13	14.1	Associate degree
Hazardous materials removal workers	33,320	38	50	12	31.2	Moderate-term on-the-job training
Structural iron and steel workers	42,430	73	83	11	15.0	Long-term on-the-job training
Security and fire alarm systems installers	33,410	47	57	10	21.7	Postsecondary vocational award
Railroad conductors and yardmasters	46,340	38	45	8	20.3	Moderate-term on-the-job training
Glaziers	32,650	49	56	7	14.2	Long-term on the job training
Transportation workers, all other	32,170	52	60	7	13.9	Short-term on-the-job training
Environmental engineering technicians	38,550	20	25	5	24.2	Associate degree
Locksmiths and safe repairers	30,360	28	33	5	16.1	Moderate-term on-the-job training

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Medical equipment repairers	37,220	29	34	4	14.8	Associate degree
Septic tank servicers and sewer pipe cleaners	28,870	20	24	4	21.8	Moderate-term on-the-job training
Elevator installers and repairers	58,710	22	25	3	14.8	Long-term on-the-job training
Motorboat mechanics	30,660	23	26	3	15.1	Long-term on-the-job training
Riggers	35,330	13	14	2	13.9	Short-term on-the-job training
Bailiffs	33,870	18	20	2	13.2	Moderate-term on the job training
Mechanical door repairers	32,000	11	12	2	15.8	Moderate-term on-the-job training
Gaming managers	58,580	4	5	1	22.6	Work experience in a related occupation
Subway and streetcar operators	49,290	9	10	1	13.7	Moderate-term on-the-job training
Embalmers	35,540	9	10	1	15.7	Postsecondary vocational award
Aircraft cargo handling supervisors	34,100	8	9	1	17.4	Work experience in a related occupation
Traffic technicians	33,670	6	7	1	14.1	Short-term on-the-job training
Occupational therapist assistants	38,430	21	29	7	34.1	Associate degree
Sales representatives, services, all other	47,000	1,807	2,115	308	17.0	Moderate-term on-the-job training
Sales representatives, wholesale and manufacturing, technical and scientific products	58,580	397	454	57	14.4	Moderate-term on-the-job training
Real estate sales agents	35,670	348	400	51	14.7	Postsecondary vocational award
Sales and related workers, all other	31,380	226	267	42	18.4	Moderate-term on the job training
Claims adjusters, examiners, and investigators	44,220	250	288	38	15.1	Long-term on-the-job training
Cost estimators	49,940	198	234	36	18.2	Work experience in a related occupation
Human resources assistants, except payroll and timekeeping	31,750	172	200	29	16.7	Short-term on-the-job training
Musicians and singers	37,130	189	216	26	14.0	Long-term on-the-job training
Construction and building inspectors	43,670	94	115	21	22.3	Work experience in a related occupation
Healthcare technologists and technicians, all other	34,230	85	104	19	22.9	Postsecondary vocational award

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Flight attendants	43,440	127	145	18	14.4	Long-term on-the-job training
Life, physical, and social science technicians, all other	37,840	83	100	17	20.0	Associate degree
Entertainers and performers, sports and related workers, all other	34,800	76	92	16	21.0	Long-term on-the-job training
Biological technicians	33,210	64	75	11	17.2	Associate degree
Lodging managers	37,660	58	68	10	16.6	Work experience in a related occupation
Audio and video equipment technicians	32,570	46	55	8	18.1	Long-term on-the-job training
Desktop publishers	32,340	34	41	8	23.2	Postsecondary vocational award
Gaming supervisors	40,840	38	44	6	16.3	Work experience in a related occupation
Environmental science and protection technicians, including health	35,340	31	36	5	16.3	Associate degree
Forensic science technicians	44,010	10	13	4	36.4	Associate degree
Court reporters	42,920	18	21	3	14.8	Postsecondary vocational award
Media and communication equipment workers, all other	41,120	19	23	3	17.0	Moderate-term on-the-job training
Social science research assistants	34,360	18	21	3	17.4	Associate degree
Agricultural and food science technicians	29,730	23	26	3	13.4	Associate degree
Insurance appraisers, auto damage	45,330	13	15	2	16.6	Long-term on the job training
Sound engineering technicians	38,110	13	16	2	18.4	Postsecondary vocational award
Nuclear technicians	59,200	7	8	1	13.7	Associate degree
Registered nurses	52,330	2,394	3,096	703	29.4	Associate degree
Computer support specialists	40,430	518	638	119	23.0	Associate degree
Police and sheriff's patrol officers	45,210	639	738	99	15.5	Long-term on the job training
Dental hygienists	58,350	158	226	68	43.3	Associate degree
Paralegals and legal assistants	39,130	224	291	67	29.7	Associate degree
Self-enrichment education teachers	30,880	253	317	64	25.3	Work experience in related occupation
Radiologic technologists and technicians	43,350	182	224	42	23.2	Associate degree
Medical and clinical laboratory technicians	30,840	147	183	37	25.0	Associate degree

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Computer specialists, all other	59,480	149	177	28	19.0	Associate degree
Respiratory therapists	43,140	94	120	27	28.4	Associate degree
Physical therapist assistants	37,890	59	85	26	44.2	Associate degree
Advertising sales agents	40,300	154	180	25	16.3	Moderate-term on-the-job training
Appraisers and assessors of real estate	43,390	102	125	23	22.8	Postsecondary vocational award
Massage therapists	31,960	97	120	23	23.6	Postsecondary vocational award
First-line supervisors/managers of police and detectives	64,430	100	115	16	15.5	Work experience in a related occupation
Detectives and criminal investigators	53,990	91	106	15	16.4	Work experience in a related occupation
Diagnostic medical sonographers	52,490	42	57	15	34.8	Associate degree
Cardiovascular technologists and technicians	38,690	45	60	15	32.6	Associate degree
First-line supervisors/managers of fire fighting and prevention workers	58,920	56	68	12	21.1	Work experience in a related occupation
Interior designers	40,670	65	75	10	15.5	Associate degree
Private detectives and investigators	32,110	43	50	8	17.7	Work experience in a related occupation
Media and communication workers, all other	40,850	39	46	6	15.7	Long-term on-the-job training
Interpreters and translators	33,860	31	37	6	19.9	Long-term on-the-job training
Radiation therapists	57,700	15	19	4	26.3	Associate Degree
Nuclear medicine technologists	56,450	18	22	4	21.5	Associate degree
Athletes and sports competitors	48,310	17	21	4	21.1	Long-term on-the-job training
Camera operators, television, video, and motion picture	37,610	28	32	4	14.2	Moderate-term on-the-job training
Air traffic controllers	102,030	24	28	3	14.3	Long-term on-the-job training
Drafters, all other	41,860	24	27	3	14.0	Postsecondary vocational award
Emergency management specialists	45,390	10	13	2	22.8	Work experience in a related occupation
Airfield operations specialists	36,680	5	6	1	15.0	Long-term on-the-job training

OCCUPATION	MEDIAN ANNUAL EARNINGS (as of May 2004)	EMPLOYMENT (in thousands)		EMPLOYMENT CHANGE, 2004-2014		MOST SIGNIFICANT SOURCE OF POSTSECONDARY TRAINING
		2004	2014	Number (thous)	Percent	
Healthcare practitioners and technical workers, all other	33,360	55	68	13	23.8	Postsecondary vocational award
Commercial pilots	53,870	22	26	4	16.8	Postsecondary vocational award
Occupational health and safety technicians	42,130	12	14	2	17.1	Postsecondary vocational award
Audio-visual collections specialists	32,990	9	11	2	18.6	Moderate-term on-the-job training

American Culinary Federation Foundation
Apprenticeship

Overview

The American Culinary Federation Foundation, Inc. (ACFF), the educational arm of the American Culinary Federation, Inc. (ACF), offers a highly-respected Apprenticeship program that provides on-the-job training combined with technical classroom instruction. The program, available to individuals at least 17 years of age and a high-school graduate or equivalent, allows individuals the ability to work full-time under a qualified supervising chef while enrolled in a culinary program simultaneously. Today, there are nearly 2,000 apprentices learning in approximately 80 ACF-sponsored culinary apprenticeship programs in the United States.

Programs vary from an abbreviated six-month program to two-and three-year programs. Apprentices complete designated hours for both on-the-job training and culinary classes each year of their program. Upon completion of the program, apprentice graduates are eligible for Certified Culinarian (CC) or Certified Pastry Culinarian (CPC) status through the ACF National Office.

Apprentices are encouraged to join their respective local chapter of the ACF. Membership includes: opportunities to network with top industry professionals, potential future employers and renowned chefs; access to ACF's online Career Center; free subscriptions to ACF's publications; and discounts for ACF certification, and conference and convention registration.

Apprenticeship Program Objectives

- Learn and master cooking and baking skills, including healthy food preparation techniques, in the classroom and on the job under the direction of a trained chef.
- Develop basic principles of nutrition, dietetics, and food and beverage composition.
- Understand the requirements for proper food handling, sanitation and hygiene.
- Gain an understanding of management and supervisory knowledge in preparation for a progressive career in the culinary industry.
- Acquire a professional work ethic necessary for success in the hospitality industry.
- Prepare culinarians for ACF professional CC or CPC certification testing.

Applying for an Apprenticeship Program

Students can apply directly to an ACF chapter, institution, corporate site, or independent property that sponsors an apprenticeship program. For more information and apprenticeship locations visit www.acfchefs.org or call the ACF Education Department at the national headquarters of the American Culinary Federation at (800) 624-9458.

Apprenticeship Program Requirements

If accepted into an apprenticeship program, students will be required to:

- Pay applicable enrollment fees to include registration, text books and study guides.
- Complete either two or three years of full-time work (either 4,000 or 6,000 hours) of on-the-job training in a foodservice kitchen under a qualified chef.
- Complete a minimum of 12 courses in culinary related subjects to include sanitation and food safety, introduction to cooking, introduction to baking and advanced cooking, either through an accredited institution or college or online through an approved educational provider.

The U.S. Department of Labor has recognized the exceptional ACFF apprenticeship-training program since 1976. With employment opportunities for cooks and chefs steadily increasing, the Bureau of Labor Statistics estimates that employment in the foodservice industry will increase faster than the average of all other occupations.

The American Culinary Federation, Inc., (ACF) is the largest professional, not-for-profit organization for chefs and cooks in the United States, and was founded more than 75 years ago. ACF promotes the culinary profession by providing professional development, career building and networking opportunities to its members.

American Culinary Federation Foundation

WORLD ASSOCIATION OF CHEFS SOCIETIES

180 Center Place Way • St. Augustine, Florida 32095
Tel: (800) 624-9458 • Fax: (904) 825-4758
www.acfchefs.org

Office of Apprenticeship
Anthony Swoope, Administrator

EMPLOYMENT AND TRAINING ADMINISTRATION
UNITED STATES DEPARTMENT OF LABOR

Apprenticeship Beyond Boundaries:

Celebrating 70 years of Outstanding Service in Preparing American Workers

Funding Opportunities for Registered Apprenticeship Programs

For both businesses and apprentices
The following website is the single access point for more than 1,000 grant programs offered by all Federal grant making agencies.
http://www.grants.gov/

Career One Stop
Most workforce funding is provided on the state and local level and requires businesses visiting their Workforce Investment or Career One Stop Center. Students and job seekers can find jobs and businesses can post jobs at the centers. This website provides a wealth of information. It links to the service locator where you find your local and state One-Stops and public workforce services.
http://www.careeronestop.org/

Map of state one-stop centers to help you find your nearest One-Stop center.
http://www.doleta.gov/usworkforce/onestop/onestopmap.cfm

For apprenticeship sponsors
If you have a small business, the U.S. Small Business Administration (SBA) can provide financial, technical and management assistance. SBA is the nation's largest single financial backer of small businesses.
http://www.sba.gov/financing/
or call 1-800-UASK-SBA (800-827-5722)

The Manufacturing Extension Project (MEP) can help small manufacturing businesses.
The website offers links to all state MEP locations.
http://www.mep.nist.gov/ or call 1-800-MEP-4MFG

Department of Commerce grants
http://www.commerce.gov/grants.html

Department of Labor grants
http://www.dol.gov/dol/grants2.htm

State-specific apprenticeship tax credits and tuition benefits

Arkansas
Tax Credit Regulation – Youth Apprenticeship Program (Act 1103 of 1995)
http://72.14.203.104/search?q=cache:BDK1FKTdecgJ:www.arkansas.gov/dfa/rules/it1996_1.pdf+Arkansas+Youth+Apprenticeship+Program+Act+1103+of+1995&hl=en&gl=us&ct=clnk&cd=1

California
Tuition benefit
Montoya funds, or RSI funds, allow community colleges and program sponsors to enter into Excess Cost Agreements. Under these Excess Cost Agreements, program sponsors may receive funds in excess of costs to the community colleges for providing apprenticeship training. This is an attractive financial incentive for employers and joint apprenticeship training committees.
http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=08001-09000&file=8150-8156

Connecticut
Tax credit
Apprentices that use the Connecticut Technical school system (Adult Division) for related instruction pay a maximum of $100.00 per course, 50% of which must be paid by the sponsor at the time of registration. This does not apply to apprentices that are attending community colleges.
http://www.ctdol.state.ct.us/progsupt/appren/taxcr.htm

- continued on back

For apprentices

Financial aid
U.S. Department of Education
http://studentaid.ed.gov/PORTALSWebApp/students/english/index.jsp

Local aid
http://www.careeronestop.org/FINANCIAL/FinancialAidHome.asp

California, Washington, and Texas offer reduced tuition for apprentices.

Financial Management
"Financial Tools for the Trades: A Survival Guide for Apprentices"
http://www.portjobs.org/survival_guide.htm

To establish or find out more about registered apprenticeship, contact:
Office of Apprenticeship
U.S. Department of Labor
Employment and Training Administration
200 Constitution Avenue, NW
Washington, DC 20210
(202) 693-2796
http://www.doleta.gov/oa

State-specific apprenticeship tax credits and tuition benefits,

continued

Maine
Tuition benefit
The following is an excerpt from Maine Revised Statutes Title 26, §2006, 5-A, I (2):
"As funds permit, the Maine Department of Labor shall underwrite 50% of tuition costs for apprentices in good standing at public educational institutions and provide tuition assistance to sponsor groups in accordance with committee policies. To ensure that adequate funds are available for tuition, the committee shall provide the Commissioner of Labor with its biennial plan, including projected apprenticeship enrollments and a subsequent budget request."
http://janus.state.me.us/legis/statutes/26/title26sec2006.html

Michigan
Youth Apprenticeship Tax Credit
http://www.crcmich.org/EDSurvey/jobtraining/yratc.html

Missouri
Youth Opportunity Program tax credits
http://ded.mo.gov/BDT/topnavpages/Research%20Toolbox/BCS%20Programs/Youth%20Opportunity%20Program.aspx

Rhode Island
Employers' Apprenticeship Tax Credit
http://www.rihric.com/hrictaxcredits.htm

Virginia
Tax credit
http://www.doli.virginia.gov/whatwedo/apprenticeship/retraining_taxcr.html

Intro

ODEP
Office of Disability Employment Policy

U.S. Department of Labor presents:

Youth with Disabilities Entering the Workplace through Apprenticeship

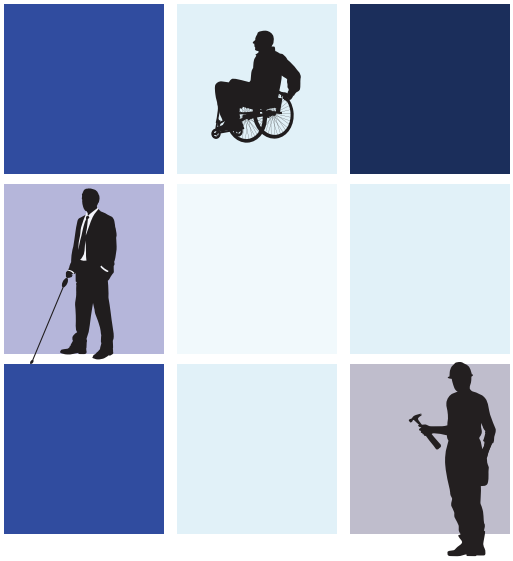
About this Tool Kit:

This tool kit was developed under contract with the U.S. Department of Labor's Office of Disability Employment Policy. A companion research paper was also prepared that examined issues surrounding apprenticeship and people with disabilities. A number of experts in the apprenticeship, disability and youth development fields were consulted in the preparation of both of these documents. Their assistance is greatly appreciated.

The purpose of the tool kit is to provide information on a series of topical areas around registered apprenticeship and how it can be used to provide employment opportunities for people with disabilities. The intended audiences for this tool kit are service providers, both public and private, that work with young people, including young people with disabilities. As such, a variety of service providers should find this useful, including youth workforce development professionals, vocational rehabilitation service providers, other disability service providers, including community rehabilitation providers, One-Stop Career Center personnel, and high school personnel that work with youth on post-secondary transition planning. Although the emphasis is on young people with disabilities, much of the information is applicable to all youth and young adults.

The tool kit is organized by the following six topical areas:

1. **Understanding Apprenticeship Basics**
2. **Preparing Youth and Young Adults for Apprenticeship Programs**
3. **Increasing Participation of Young Adults with Disabilities In Apprenticeship Programs**
4. **Establishing New Apprenticeship Programs**
5. **What Apprenticeship Employers Need to Know About Working with Young Adults with Disabilities**
6. **Looking to Future Opportunities in Apprenticeship**



Each of the guide sheets in this tool kit has three sections: 1) An Overview, which introduces the topic; 2) What You Need to Know, which provides content information on the topic; and 3) Where to Go for More Information, which provides additional web-based resources. The guide sheets, which collectively provide a comprehensive resource on registered apprenticeship, can also be used individually. Some information is repeated to facilitate individual use. Users of this guide should feel free to distribute it in its entirety or in parts. For example, the guide sheet "What Apprenticeship Employers Need to Know about Working with Young Adults with Disabilities" may serve as a suitable stand-alone handout for employers.

Tool kit prepared by: Irene Lynn, Institute for Educational Leadership - Dominique Mack, HeiTech Services

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Youth with Disabilities Entering the Workplace through Apprenticeship

Understanding Apprenticeship Basics

An Overview:

Apprenticeship is one of the oldest forms of training. It involves learning on the job under the direction of a master or senior worker. In the U.S., registered apprenticeship has a defined meaning and a long, rich history. The registered apprenticeship system dates back to 1937 with the passage of the Fitzgerald Act—national legislation that lays the foundation for the federal-state system that exists today.

The registered apprenticeship system dates back to 1937

What You Need to Know:

The Fitzgerald Act, also known as the National Apprenticeship Act, officially authorized and established the national apprenticeship system. This Act gave the U.S. Secretary of Labor authority over apprenticeship programs, established an office of apprenticeship within the U.S. Department of Labor (DOL), and provided for the recognition of state agencies to register and administer apprenticeship programs. Twenty-five states plus the District of Columbia and Puerto Rico have recognized state apprenticeship operations. In the remaining states, DOL administers apprenticeship. DOL also recognizes apprenticeship occupations and maintains records on all apprenticeship programs and registered apprentices.

Apprenticeship is a highly desirable form of training for workers because it is first and foremost a job. It allows for: learning job skills while earning an income; wage progression; and a widely recognized and portable certificate of completion and proficiency.

Apprenticeship is limited to skilled occupations and trades that meet basic criteria. Apprenticeable occupations are: 1) customarily learned in a practical way through a structured, systematic program of on-the-job supervised training supplemented by related technical instruction; 2) clearly identified and commonly recognized throughout an industry; and 3) involve the acquisition of manual or technical skills and knowledge. There are currently over 950 occupations that have been recognized as apprenticeable, and occupations are continually being added to the list.

Apprenticeship training programs in apprenticeship occupations must meet basic standards to be registered by a federal or state apprenticeship agency. There are currently 23 different standards for recognition of apprenticeship programs. These standards relate to:

- The type of occupations and the duration of training;
- The methods of training and the contents of the training agreement between the apprentice and program sponsor;
- Employment and supervision of apprentices, including requirements for wage progression;
- Registration, record maintenance, reporting and certification; and
- Compliance with equal employment opportunity requirements.

Related instruction is commonly provided in the classroom, but other types of instruction, such as on-line learning and individualized instruction are also permitted. Federal rules recommend that apprentices complete at least 144 hours of related instruction per year, which many apprenticeship programs choose to require. In many apprenticeship programs, the related instruction can also lead to a college degree, thereby providing the individual with an opportunity to earn both academic and occupational credentials simultaneously.

Apprenticeship programs are operated by both the public and private sectors. Employers, employer associations and labor-management committees sponsor and operate apprenticeship programs. Apprenticeship sponsors typically pay the training costs, although some financial incentives and assistance may be available.

There are currently approximately 28,000 registered apprenticeship programs and more than 450,000 active apprentices. In 2007 alone, over 3,000 new programs were added and over 200,000 individuals entered apprenticeship programs. Registered apprenticeship programs and apprentices are found in nearly all industries. The largest number of apprentices are within the building and construction trades—the historical base of apprenticeship. Other occupations that have a significant number of registered apprentices include truck drivers, correction officers, cooks and child care development specialists.

On October 29, 2008, for the first time in 30 years, the U.S. Department of Labor (DOL) published new regulations to modernize the National Apprenticeship System in the Federal Register. These regulations provide for more flexibility in how Related Technical Instruction (RTI) can be delivered, and provide registration agencies with the option of issuing interim credentials to offer active apprentices official recognition of their accomplishments and equip them with a portfolio of skills and incentives to complete their programs and continue their career preparation. Finally, these regulations allow program sponsors to offer three different ways for apprentices to complete a registered apprenticeship program:

1. The traditional, time-based approach, which requires the apprentice to complete a specific number of on-the-job (OJT) and RTI hours;
2. A competency-based approach, which requires the apprentice to demonstrate competency in the defined subject areas and requires OJT and RTI; and
3. A hybrid approach, which requires the apprentice to complete a minimum number of OJT and RTI hours and demonstrate competency in the defined subject areas.

The Web site for DOL's Office of Apprenticeship, referenced next, contains the new regulations as well as related information.

Where to Go For More Information:

The U.S. Department of Labor maintains a Web site for apprenticeship **(www.doleta.gov/OA).** Information on state apprenticeship agencies may be accessed through this site or through the National Association of State and Territorial Apprenticeship Directors Web site **(www.nastad.us).**

DOL also sponsors a Web site called Career Voyages that includes a section on apprenticeship **(www.careervoyages.gov/apprenticeship-main.cfm)**.

Learn More

1. **Understanding Apprenticeship Basics**
2. Preparing Youth and Young Adults for Apprenticeship Programs
3. Increasing Participation of Young Adults with Disabilities In Apprenticeship Programs
4. Establishing New Apprenticeship Programs
5. What Apprenticeship Employers Need to Know About Working with Young Adults with Disabilities
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Youth with Disabilities Entering the Workplace through Apprenticeship

Preparing Youth and Young Adults for Apprenticeship Programs

An Overview:

Far too many youth, particularly those with disabilities, leave secondary education without a clear plan for post-secondary studies and careers. Youth with disabilities are half as likely as their peers to participate in post-secondary education. Effective transition services are key for young people to make informed choices about their futures. Federal law requires that transition planning for youth with disabilities begin no later than age 16, and the plan must include measurable post-secondary goals. Although apprenticeship programs can create opportunities for both employment and post-secondary education, they are rarely considered as an option for youth with disabilities during transition planning.

What You Need to Know:

Each year approximately 200,000 individuals enter apprenticeship programs. Although apprenticeship jobs cut across a wide-breadth of industries and occupations, there is a concentration within the building and construction trades, the traditional base for apprenticeship. The vast majority of apprentices are at least 18 years old, and apprenticeship programs generally require that individuals have at least a high school diploma or its equivalent to enter apprenticeship programs. Given that apprenticeship is largely an adult program, it should be considered as a post-secondary option.

Certainly not all youth have the interest or aptitude for apprenticeship programs. Career assessment and planning is the key to determining whether a young person should consider apprenticeship as a post-secondary option. The assessment process may begin with less formal methods of assessment, such as discovery or a career interest inventory. Either of these methods can help an individual identify their occupational preferences based on a series of questions around their general interests and aptitudes.

There are many widely available resources that youth, parents, school administrators and service providers can use to facilitate the process. One example is Career Planning Begins with Assessment: A Guide for Professionals Serving Youth with Educational and Career Challenges. This guide, tailored to service providers working with youth and young adults with disabilities, contains a comprehensive inventory of various assessment instruments, and information on their purposes, how they are administered, and target groups and costs. **Please see the Where to Go For More Information section to learn more about this resource.**

For youth with disabilities, transition planning is a component of the youth's Individual Education Program (IEP) that is required by federal law. While transition planning is required to be included in the youth's IEP beginning at age 16, many experts feel that the planning should begin earlier, at least by age 14. The first step is assessing a youth's interests, aptitudes and abilities and then planning specific activities and a course of study that is appropriate for the youth.

Vocational programs focus on the skills, knowledge and abilities that prepare youth for the workplace. All youth, particularly those with disabilities, also benefit from including work-based learning opportunities in their career planning and preparation. Work-based learning provides youth with exposure to the workplace through a variety of options, including internships, job shadowing, and summer employment. Many vocational programs include work-based learning components.

In some communities, there are secondary programs that tie directly into apprenticeship. These programs are called pre-apprenticeship, school-to-apprenticeship, or youth apprenticeship programs. They are generally available only in certain states and school districts. Technical education officials in school districts have information about these programs.

For young people who are out of school, there are a number of options available to prepare for apprenticeship programs. Many of these programs also offer high school diplomas or intensive preparation for the General Education Development Diploma (GED). These workforce development programs typically also provide youth with help finding a job and offer some post-placement support. Information on these programs is generally available at One-Stop Career Centers located in communities across the country and through program-sponsored Web site locations.

Pre-apprenticeship programs are sponsored by a variety of organizations, often those that are directly connected to apprenticeship programs, such as the Home Builder's Institute. These programs offer an individual the opportunity to acquire basic skills needed for the occupation. In some instances, individuals that go into registered apprenticeship programs can get credit towards their apprenticeship certification for skills that were acquired in the pre-apprenticeship program. While these programs have traditionally been in the building and construction trades, some communities may have programs for other apprenticeship occupations such as those in health care, culinary arts, and technology.

Two national programs provide opportunities in nearly every state for youth to prepare for apprenticeship.

The U.S. Department of Labor's Job Corps program provides low-income youth, ages 16 to 24, the opportunity to acquire a high school credential and job skills in a wide variety of occupational areas. The 122 Job Corps Centers located in 48 states, the District of Columbia and Puerto Rico provide training in all of the leading apprenticeship occupations, especially those in the building and construction trades. Most, but not all, Job Corps students reside at the Center while completing their programs of study. An important feature of the Job Corps is that during the first 60 days of the program, youth receive assistance in creating a Personnel Career Development Plan, which outlines the student's goals for the program. Assessing students' interests and aptitudes are a part of this career planning.

The second national program is called YouthBuild, and it provides work readiness training, job training in building and construction-related trades, and community service to low-income youth between 16 and 24 years of age. Youth may also work towards their GED or high school diploma. There are approximately 230 YouthBuild programs operating in 44 states, including the District of Columbia, Puerto Rico and the Virgin Islands. The U.S. Department of Labor provides funding to many, but not all, YouthBuild sites.

The availability of workforce development programs for out-of-school youth varies greatly from community to community. An employment counselor is the best person to help a young adult determine what programs are available and their entry requirements. Employment counselors can also help youth assess their interests, aptitudes and abilities. One-Stop Career Centers, Vocational Rehabilitation Agencies, community rehabilitation providers, and community colleges are the most prominent organizations that have employment counselors available to assist individuals with disabilities.

Where to Go For More Information:

For a directory of **One-Stop Career Centers** across the U.S., visit: **http://www.careeronestop.org/findos/default.aspx.**

DOL sponsors a Web site called **Career Voyages** that discusses a young person's post-secondary options, including apprenticeship: **www.careervoyages.gov/apprenticeship-main.cfm.**

The **National Collaborative on Workforce and Disability/Youth (NCWD/Y)** produced a guide that provides guidance and counseling tools necessary to help youth with disabilities successfully transition into the adult world of work. Career Planning Begins With Assessment is available at: **www.ncwd-youth.info/resources_&_Publications/assessment.html.**

To learn about Job Corps visit: **http://jobcorps.dol.gov/pp**.

For more information on **YouthBuild** USA visit: **www.youthbuild.org.**

The Home Builders Institute develops training materials for the construction trades and sponsors programs for youth and adults in certain states. Learn more about **Project CRAFT**, an apprenticeship focused training program for youth, at: **www.hbi.org/page.cfm?pageID=129**. Project HOPE is specifically for individuals with disabilities, but participants must be at least 18 years of age: **www.hbi.org/page.cfm?pageID=132**.

In many instances, the related training for apprenticeship programs is provided by community colleges. Some also provide pre-apprenticeship programs. Visit community colleges in your area to find more information. For a directory of community colleges and access to individual community college Web sites, visit the **American Association of Community Colleges** at: **www.aacc.nche.edu.**

Where to Go For More Information Continued:

The **National Secondary Transition Technical Assistance Center (NSTTAC)** works directly with State Education Agencies to enhance transition services and improve post-school outcomes for youth with disabilities. This site, funded through the Department of Education's Office of Special Education Programs, offers abundant resources pertaining to transition planning, and can be accessed at **www.nsttac.org.**

To locate **Community Rehabilitation Providers** within your community, contact your local Vocational Rehabilitation office. You can search for the office closest to you on America's Service Locator: **www.servicelocator.org.**

Learn More

1. Understanding Apprenticeship Basics
2. **Preparing Youth and Young Adults for Apprenticeship Programs**
3. Increasing Participation of Young Adults with Disabilities In Apprenticeship Programs
4. Establishing New Apprenticeship Programs
5. What Apprenticeship Employers Need to Know About Working with Young Adults with Disabilities
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Youth with Disabilities Entering the Workplace through Apprenticeship

Increasing the Participation of Young Adults with Disabilities in Apprenticeship Programs

An Overview:

Apprenticeship programs offer young adults, including those with disabilities, a career pathway that provides employment as the individual learns on the job. Individuals who successfully complete an apprenticeship program become journey level workers and receive a widely recognized credential of skills attainment. Although the availability of apprenticeship openings varies by community, many different industries and occupations are represented in apprenticeship programs. Considering all the benefits of apprenticeship, more focused attention should be given to learning about available apprenticeship openings, developing relationships with apprenticeship employers, and increasing the participation of individuals with disabilities in apprenticeship programs.

What You Need to Know:

There are many myths and misperceptions that surround apprenticeship. Here are some important facts to know when considering apprenticeship as an employment option for young adults.

First and foremost, apprenticeship is a job, making it a highly desirable post-secondary option for young adults, including those with disabilities.

As apprentices progress they are guaranteed wage increases, as outlined in the apprenticeship program standards.

While apprenticeship originated from and remains prominent in the building and construction trades, many other occupations also have apprenticeship programs. In fact, over 950 occupations have been recognized by the Department of Labor (DOL) for apprenticeship programs.

Registered apprenticeship is a voluntary, industry-driven training program. The program can be a partnership of business and organized labor or implemented by employers or employer associations. Employers generally bear the costs of the program. Government plays a supporting role, providing technical assistance and support, registering programs and apprentices, and issuing credentials to those individuals who successfully complete the program.

Apprentices may begin a registered apprenticeship at 16 years of age, but the minimum age for most programs is 18. Other basic qualifications for apprenticeship programs are set by the employer or partnership that sponsors the program.

It is important to learn about the apprenticeship programs that are operating in your community, the minimum qualifications for applicants, and announcements of openings for new applicants.

There are several ways to learn about the registered apprenticeship programs that are active in the community. The government agencies that register and support apprenticeship programs have a list of program sponsors (the term for apprenticeship programs) in the state. In 25 states plus the District of Columbia and Puerto Rico, there is a state agency that administers apprenticeship. In the remaining states, that function is performed by the federal Office of Apprenticeship. In addition, DOL's Office of Apprenticeship maintains a listing of all its program sponsors by state, and this is available through its Web site. The resource section below provides links for the directories of state and federal apprenticeship program officials and the listing of program sponsors.

At the local level, One-Stop Career Centers and community colleges are good sources of information about apprenticeship programs and apprenticeship applicant openings. All One-Stop Career Centers are part of an electronic job bank that is available to the community and may include apprenticeship job openings. Community colleges typically offer employment services to the community, and are one of the primary sources of apprenticeship-related training.

Many apprenticeship programs are suitable for individuals with a broad range of abilities. For example, career lattice apprenticeships found within the culinary, nursing, retail pharmacy, and security officer occupations, offer individuals, including those with disabilities, the opportunity to receive an interim credential called a "Certificate of Training." This credential recognizes achievement of a specific set of skills. Such career lattice apprenticeships allow individuals, both with and without disabilities, to move laterally or upward within an industry.

It is important that the prospective applicants for apprenticeship have the skills, aptitudes and interests needed to succeed. The Career Voyager Web site, sponsored by DOL, is a good source of information for individuals to learn about careers, emerging occupations and job requirements, including apprenticeship. A vocational assessment may be necessary to determine whether an individual is suited to the available apprenticeship programs. The assessment should include the following areas:

- Academic performance or achievement
- Physical and cognitive abilities
- Vocational interests and aptitudes
- Occupational skill competencies

There are myriad tools and resources within communities to help with the vocational assessment. Most agencies and organizations that work with individuals with disabilities have this capability. Vocational Rehabilitation Services and its network of community resource providers are a particularly good source for obtaining assessments for qualified clients. If assistance is needed, local One-Stop Career Centers and community colleges are also good places to find help.

Some individuals may need additional training before they can qualify for an apprenticeship program. Typically, the training falls into two categories: basic skills needed to qualify for the occupation; and general work-readiness skills that provide an individual with the "soft skills" employers look for in job applicants. Pre-apprenticeship programs provide these types of opportunities, although they mainly exist within the building and construction trades. One-Stop Career Centers and community colleges are good sources for both basic skill and work-readiness training.

Another recommended approach is to develop partnerships with existing program sponsors. These partnerships could include opportunities for individuals to "try out" the jobs without cost to the employer through internships or on-the-job training programs sponsored by the referring agency. Such partnerships also facilitate learning about apprenticeship openings that become available.

Often people with disabilities are involved with more than one system or service provider. For example, a Job Corps student might also be a Vocational Rehabilitation client. Services need to be coordinated to avoid duplication and to insure that only one agency or organization is working directly with an employer on an individual's behalf.

Helping to defray some of the costs associated with providing apprenticeship and pre-apprenticeship training can make an applicant more attractive when competing for apprenticeship openings. Some of the costs that could be supported include those for the related training (normally classroom instruction) that is required in all apprenticeship programs. Additionally, employers usually incur expenses for tools, uniforms, equipment, as well as costs associated with providing reasonable accommodations for an individual with disabilities. Vocational Rehabilitation funds can be used to offset training, support services, tools and equipment, and accommodation costs for qualified clients. Workforce Investment Act (WIA) funds may also be used for tools, equipment and training, and support services. Continuing to support individuals once they are placed in apprenticeship programs, including the costs of a job coach for individuals with more significant disabilities, is also an important strategy for increasing apprenticeship opportunities.

Where to Go For More Information:

General information on registered apprenticeship may be obtained from the U.S. Department of Labor, Office of Apprenticeship: **www.doleta.gov/OA/eta_default.cfm.** Additionally, staff directories are available for:

The National Office: **www.doleta.gov/OA/national.cfm**.

Apprenticeship Officials by State: **www.doleta.gov/OA/stateoffices.cfm**.

You can search for program sponsors in your state through the Office of Apprenticeship at: **http://oa.doleta.gov/bat.cfm**.

For a directory of **One-Stop Career Centers** across the U.S., visit: **www.careeronestop.org/findos/default.aspx**.

DOL sponsors a Web site called **Career Voyages** that discusses a young person's post-secondary options, including apprenticeship: **www.careervoyages.gov/apprenticeship-main.cfm**.

Visit the community colleges in your area to find more information about possible apprenticeship programs, pre-apprenticeship programs, and related training. For a directory of community colleges and access to individual community college Web sites, visit the **American Association of Community Colleges** at: **http://www.aacc.nche.edu.**

You can search for the local **Vocational Rehabilitation** office closest to you on America's Service Locator: **www.servicelocator.org.**

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Youth with Disabilities Entering the Workplace through Apprenticeship

Establishing New Apprenticeship Programs

An Overview:

A lack of available apprenticeship openings should not deter interested private and nonprofit agencies and organizations or individuals from pursuing apprenticeship as a post-secondary option for young adults with disabilities. New programs are continually being added to the apprenticeship program rolls, and with over 950 occupations recognized as apprenticeable by the U.S. Department of Labor (DOL) the possibilities are almost endless. Starting new apprenticeship programs, however, requires a willing employer and the technical support from local apprenticeship staff to make it happen.

What You Need to Know:

Registered apprenticeship is a voluntary industry-driven employment and training program. Apprenticeship programs are operated by a partnership between a business or industry, and organized labor, individual employers, or employer associations. The operator of an apprenticeship program is called a program sponsor. Potential program sponsors need to identify the benefits of apprenticeship to their organization or business before expending the effort and expense involved in establishing and administering an apprenticeship program.

A well-planned apprenticeship program yields many advantages to the employer, and can:

- Attract highly qualified applicants;
- Reduce absenteeism and turnover;
- Increase productivity;
- Ensure employees are trained to industry standards; and
- Provide employers with a competitive edge through a well-trained and flexible workforce.

Some apprenticeship programs are registered with DOL while others, located in 25 states, plus the District of Columbia, Puerto Rico and the U.S. Virgin Islands, are registered through a State Apprenticeship Agency (SAA). Federal or state apprenticeship staff are located throughout the country and are available to provide technical assistance to all program sponsors. Services provided include the identification of training needs, the development of apprenticeship standards, the development of apprentice recordkeeping systems, and the coordination of services that may be provided through other federal, state, and private employment and training programs, such as Vocational Rehabilitation and its community rehabilitation providers, the One-Stop Career Center System, Job Corps, and school-based preparatory programs.

Federal regulations contain the standards for establishing and registering apprenticeship programs. Currently, there are 23 different standards for recognition of apprenticeship programs that relate to:

- Types of occupations and terms of training (e.g. duration);
- Methods of training and the contents of the training agreement between the apprentice and program sponsor;
- Employment and supervision of apprentices, including requirements for wage progression;
- Registration, record maintenance, reporting and certification; and
- Compliance with equal employment opportunity requirements.

Traditionally, training programs had to be at least one year in length to be eligible for registration, and most were between two and four years. Recent federal rule changes, however, allow programs to be competency-based rather than for a specific time period, or they can be a combination of competency and time-based. Federal regulations also recommend at least 144 hours of related instruction, which is usually classroom based.

A good place to start in developing an apprenticeship program is to look at the criteria used to establish an apprenticeship occupation. These criteria include both the on-the-job competencies that an individual must master (along with an approximate number of hours of work experience) and areas of knowledge that an individual should acquire through related training. Some employers, employer associations and labor-management partnerships have established what are called national standards for their apprenticeship occupations. These national standards are guidelines for apprenticeship programs that facilitate development of registered apprenticeship programs for specific occupations. Federal and state apprenticeship staff can provide assistance in accessing the criteria for an apprenticeship occupation and any available national guideline standards.

Federal and state apprenticeship staff can also help identify those program sponsors that include interim credentialing within their program standards, a concept that may be particularly useful for some individuals with disabilities. Interim credentials are certificates that are issued by the registration agency at the request of the program sponsor as certification of an apprentice's attainment of competency for industry-recognized components of an apprentice's occupation. These credentials provide incentives for apprentices to complete their apprenticeship and are useful in pursuing career goals.

Funding is an important consideration for employers looking at apprenticeship. Agencies and organizations interested in working with employers to establish apprenticeship programs should therefore identify potential funding sources that can be used to defray the costs of apprenticeship. Agencies that work with individuals with disabilities should also determine whether and how their own program resources can be used to help defray training costs. There are many other sources of grants, tax credits and training funds that can be used. These funding sources vary among states since many are state-based. A brochure on Funding Opportunities for Apprenticeship Programs is available through the U.S. Department of Labor's Office of Apprenticeship Web site at: **www.doleta.gov/OA/pdf/funding_fact_sheet.pdf.**

Here are some tips for developing apprenticeship programs:

Create partnerships with other agencies and organizations to facilitate the process. These partnerships might include other service providing agencies and organizations, schools, community colleges, and employer organizations. Enlist the support of state or federal apprenticeship staff. Designate individuals to form a working group to explore opportunities, work with employers, and identify funding resources.

Labor market information is crucial for focusing efforts. Try to answer the following questions: What are the emerging demand occupations in the area? Who are the employers for these demand occupations? Where are they located?

Identify potential employers. Consider larger employers, employer associations, and employers with multiple locations. Also, be sure to include public agencies and nonprofit organizations, as they are often an overlooked, but potentially willing source for apprenticeship programs. Target employers who are known to be "disability-friendly." Also, consider working with employers to make them more "disability-friendly" through internships and exposure to people with disabilities in the workplace.

Develop a marketing and outreach strategy to attract potential program sponsors. Include in your plan any available financial resources that can be used as incentives for employers to participate. Be sure to include public sector and nonprofit employers as they are the source of many jobs in apprenticeship occupations.

Once you have secured a commitment from an interested employer, your next steps are to:

- Obtain buy-in from workers and management for the idea and organize an apprenticeship committee of skilled workers and management.
- Determine the type of training to be delivered, both on-the-job and related instruction, and identify sources for delivering the related training. This can be done through a community college or other training providers. Larger employers may also have in-house capabilities to deliver training.
- Develop the standards for training, including: occupations; length of training; selection procedure; affirmative action plan; wages; and number of apprentices to be trained. Make sure that all federal (and where applicable, state) requirements are addressed.
- Recruit potential journey-level mentors and offer training in mentoring an apprentice with a disability to dispel concerns about working with people with disabilities and to help ensure a successful placement.
- Identify an individual to be the program coordinator. This is generally someone within the employer's organization. However, providing someone to serve as program coordinator for at least the first year of the program, or subsidizing the costs of an individual chosen by the apprenticeship committee can serve as an incentive for employers to participate.
- Present the program standards to federal or state apprenticeship agencies for registration. The same staff can be of assistance in developing the standards for training.
- Once the standards are approved, work with the employer to refer qualified applicants. It is also important to continue to provide support to both applicants and to employers, especially around disability related issues about which employers may not be familiar. (See Fact Sheet 3 in this series: "Increasing The Participation Of Young Adults With Disabilities In Apprenticeship Programs").
- Work closely with the program sponsor and program coordinator to monitor progress, to resolve any issues that may arise, and track results.

Where to Go For More Information:

For comprehensive information on registered apprenticeship in the U.S., including the steps for setting up an apprenticeship program, visit: **www.doleta.gov/OA/eta_default.cfm.** The complete standards for the registration of apprenticeship programs are available through the U.S. Department of Labor at: **www.doleta.gov/OA/characte.cfm.**

State apprenticeship agencies are a crucial local resource if you are developing a new apprenticeship program. Find the contact information for your state at: **www.doleta.gov/OA/stateagencies.cfm**.

The **National Association of State and Territorial Apprenticeship Directors (NASTAD)** seeks to promote the expansion of registered apprenticeship, and will work in conjunction with employers and labor organizations: **nastad.us/overview.html**.

Apprenticeship: It Makes Good Business Sense is a toolkit produced by the Wisconsin Apprenticeship Advisory Council that specifically informs employers of the steps necessary to create a new apprenticeship program: **dwd.wisconsin.gov/apprenticeship/pdf/06_EmployerToolKit.pdf.**

Small businesses may qualify for financial assistance from the **Small Business Administration (SBA)** when implementing an apprenticeship program: **www.sba.gov/services/financialassistance/index.html.**

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Youth with Disabilities Entering the Workplace through Apprenticeship

What Apprenticeship Employers Need To Know About Working with Young Adults with Disabilities

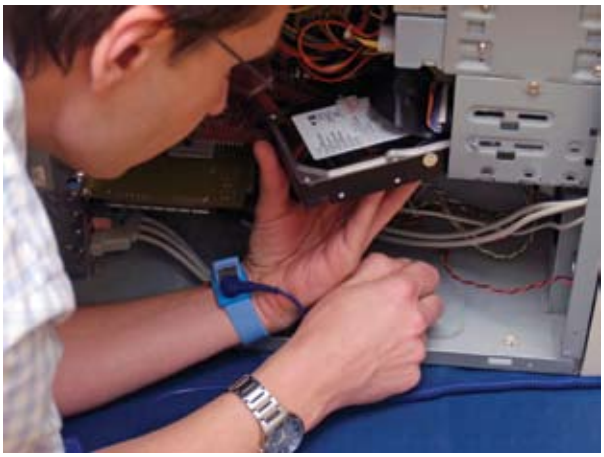
An Overview:

According to the 2007 American Community Survey (ACS), 12.8 percent of the civilian non-institutionalized population ages 21 to 64 years in the United States reported a disability — more than 22 million people. This makes individuals with disabilities one of the largest minority groups in the country. The employment rate for people with disabilities is 22.8 percent compared to 70.9 percent for people without disabilities. Individuals with disabilities are the largest untapped pool of potential workers.

Many employers are reluctant to hire individuals with disabilities because they lack understanding about their abilities. In addition, they have fears about their responsibilities for providing reasonable accommodations. Yet, employing people with disabilities improves an employer's bottom line by reducing recruiting and training costs because they are productive capable workers who tend to stay with their employers longer. Also, in some cases, employers can receive tax benefits for hiring individuals with disabilities.

What You Need to Know:

Prospective apprenticeship employers should have basic information about people with disabilities, including information about their legal responsibilities to provide reasonable accommodations in the workplace. This kind of information can dispel some of the more commonly held myths that create barriers to hiring individuals with disabilities.



When asked to define what it means for a person to have a disability, many of us think of individuals who are hearing or visually impaired, or who have mobility limitations. Certainly, these conditions are included in the definition of disabilities, but the term is far broader. Census Bureau data shows that individuals with sensory (i.e. vision and hearing) and physical disabilities constitute a little over 20 percent of people with disabilities. This means that the largest percentages of disabilities are those with so-called "hidden disabilities," such as learning and psychological disabilities.

The Americans with Disabilities Act (ADA), as amended by the Americans with Disabilities Act Amendments of 2008, was intended to address the inequities that people with disabilities face in their daily lives and in the workplace. Under the ADA, employers with 15 or more employees must provide individuals with disabilities an equal opportunity for employment. This includes providing reasonable accommodations to individuals with disabilities who are qualified to perform the work required. A common myth is that employers must hire individuals with disabilities regardless of whether they are qualified. Employers are not required to hire individuals, including those with disabilities, who do not meet the basic qualifications to perform a particular job. The applicable criterion is whether the individual can perform the job with or without reasonable accommodations.

Reasonable accommodations are modifications or adjustments to the job, the work environment, or the way things are usually done that enable qualified people with disabilities to perform the work. Employers must provide reasonable accommodations unless doing so would cause an "undue hardship". While "undue hardship" does not have a specific definition, considerations include: the impact of the costs involved, the overall financial resources of the employer; and the impact of the accommodation on the facility.

A common misconception is that accommodations are costly. Two-thirds of accommodations, however cost less than $500; nearly a quarter cost nothing. Reasonable accommodations may include:

- Modifying the work schedule.
- Modifying existing equipment or devices.
- Installing new equipment or devices.
- Modifying how instructions are provided.

Learning disabilities are the most prevalent type of disability. Learning disabilities can affect an individual's ability to interpret what they see or hear, or impair one's capacity to link information from different parts of the brain. Difficulties with reading, writing, doing math, coordination and attention are common. A 2007 National Institutes of Health study estimates that at least 15 percent of the population has some form of a learning disability, many of which are not diagnosed. Educational data on school age youth who have been classified as disabled show that over 60 percent have learning disabilities. Given the high prevalence of learning disabilities among the population, it is likely that many, if not most, employers already employ an individual with a disability.

Accommodations are specific to the individual. Typical accommodations that individuals with learning disabilities may need include:

- Reduced-distraction work environments.
- Computer technology for written work.
- Allowing more time to learn new job tasks.
- Instructions presented both in written and oral formats.
- Breaking information into small steps rather than providing a lot of information at once.

People with other types of disabilities will require a variety of other types of accommodations.

Public and private agencies and organizations that work directly with individuals with disabilities can help employers identify and implement reasonable accommodations. Foundations and other funding entities are sources of potential support. These agencies and organizations may also be able to provide assistance in defraying the costs of accommodations. Additionally, tax credits are available to defray the costs for small businesses to provide accommodations in order to remove barriers for people with disabilities at the workplace.

Employers also need to understand their legal obligations in the recruiting process. It is important to know that disability information is confidential, and it is solely up to the individual whether to disclose disability status. Many people with disabilities choose not to disclose that they have a disability. When interviewing an individual, an employer may not directly ask about disability status. Employers may ask questions regarding an individuals' ability to perform specific tasks provided the same questions are asked of all applicants. After an individual has been offered a job, an employer may ask disability-related questions and require medical exams. However, the rule of thumb is that all applicants, regardless of a possible disability, should be treated alike and not according to any assumptions, myths, or stereotypes.

There are many sources of information to assist employers in providing accommodations and working with employees with disabilities. For example, the U.S. Department of Labor's Office of Disability Employment Policy (ODEP) sponsors the Job Accommodation Network (JAN) to connect employers and people with disabilities to resources pertaining to job accommodations, self-employment, and small business opportunities: **www.jan.wvu.edu.** Additional resources are identified under "Where to Go For More Information".

Where to Go For More Information:

Visit the **Department of Justice's Americans with Disabilities Act (ADA)** homepage at **www.ada.gov** to learn more about this legislation.

For information from ODEP about tax incentives for providing business accessibility, visit: **www.dol.gov/odep/pubs/fact/tifpba.htm.**

The **Disability and Business Technical Assistance Center (DBTAC)** is a national network of 10 regional DBTAC: ADA Centers that provide up-to-date information, referrals, resources, and training on the Americans with Disabilities Act (ADA) to businesses, employers, government entities, and individuals with disabilities: **www.adata.org**.

A wide variety of disability related information, including that pertaining to employment and civil rights, can be found on the DisabilityInfo.gov Web site at: **www.disabilityinfo.gov.**

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Youth with Disabilities Entering the Workplace through Apprenticeship

Looking To Future Opportunities In Apprenticeship

An Overview:

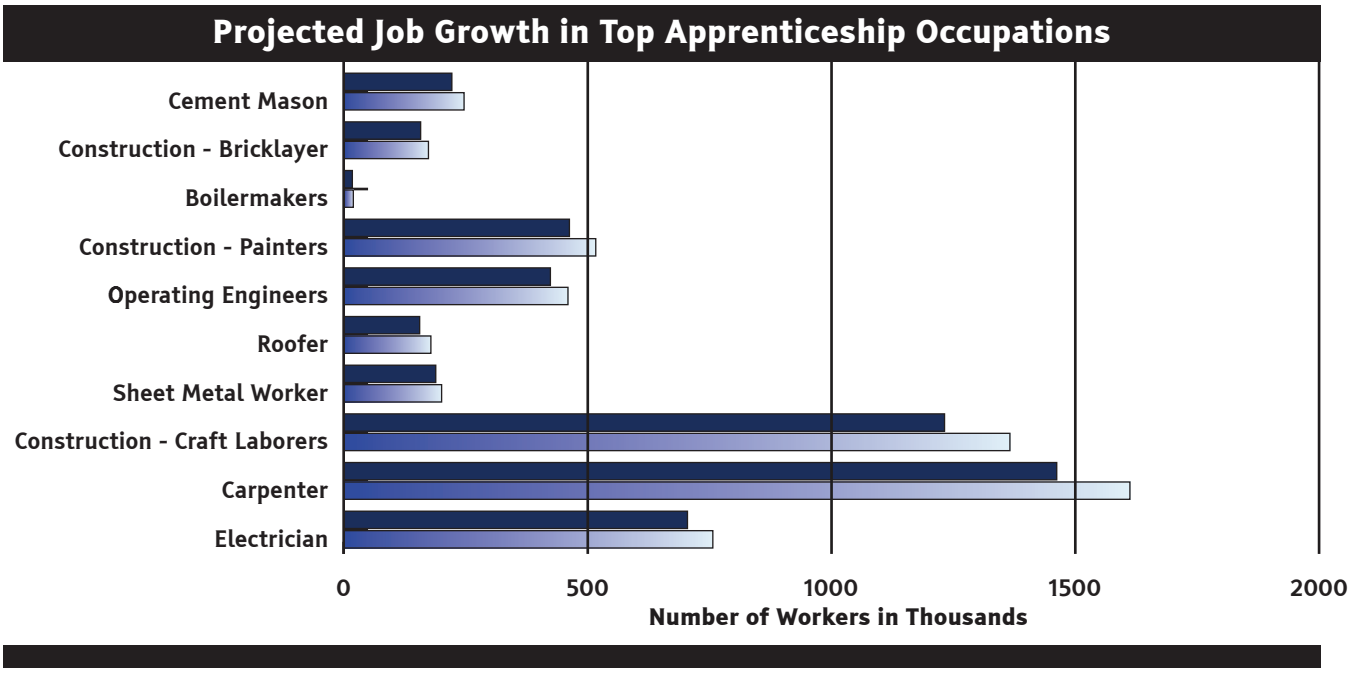
Current projections of employment growth reveal opportunities to expand the number of apprenticeship program sponsors and training slots over the next decade, both within the traditional building and construction base of apprenticeship, and in newer apprenticeship occupations. Job demand in the building and construction trades is likely to remain strong through a combination of job growth and the replacement of workers who retire. Some of the newer apprenticeship occupations, particularly some of those that provide for recognition of a specific set of skills within an apprenticeship occupation, are expected to grow. Future high demand occupations are important considerations in career planning and in pursuing new apprenticeship programs.

Recent changes to the federal apprenticeship regulations allow greater flexibility in how related technical instruction can be provided and allow program sponsors to utilize competency-based, hybrid, as well as traditional time-based apprenticeship training approaches. As a result of these changes, it is likely that more employers will participate as program sponsors of apprenticeship training. In addition, the availability of interim credentials in selected apprenticeship occupations is also likely to make apprenticeship an attractive employment option for many more people, including people with disabilities.

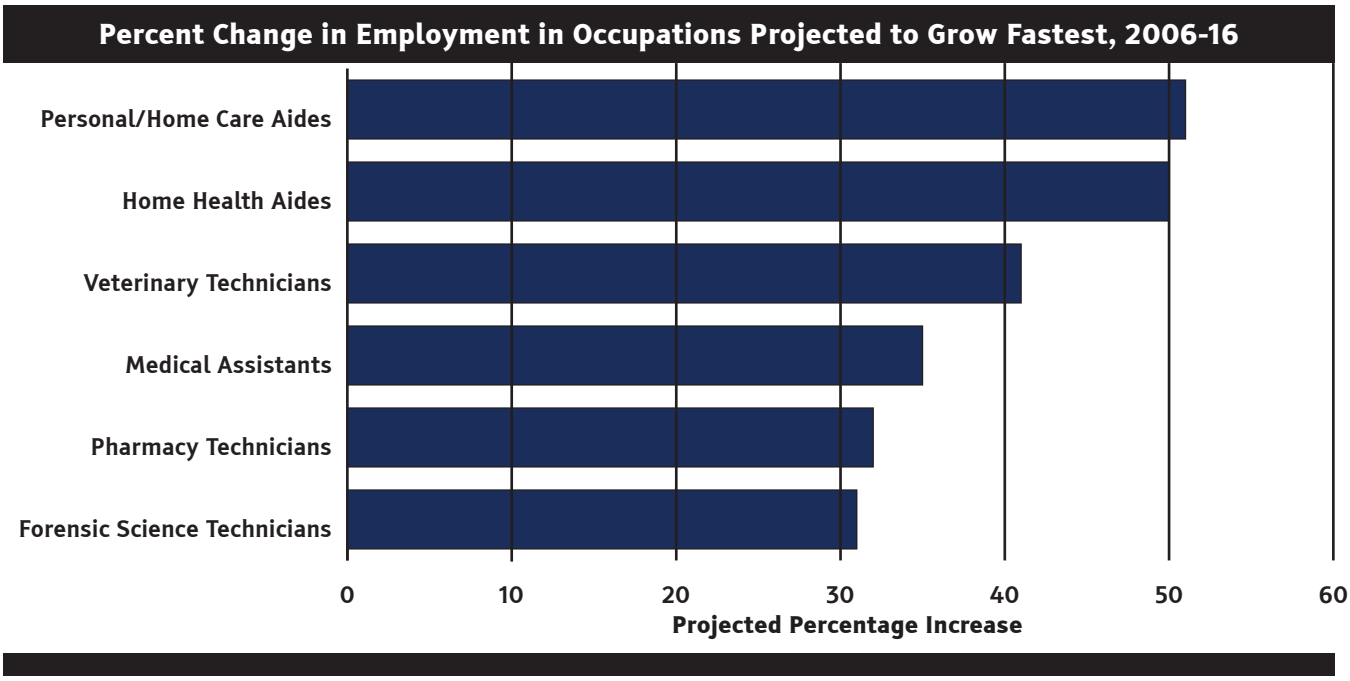
What You Need to Know:

Many high-growth technical occupations, particularly those in the medical services fields, are recognized for apprenticeship. Though registered apprenticeship has made progress in expanding beyond the traditional trades to these high-growth, high-demand occupations, most apprentices still come from building and construction. The good news is that current labor market projections indicate that traditional apprenticeship occupations will remain in demand. Two factors dictate the future of occupational demand: growth in the industry or occupation; and the number of replacement workers needed as individuals leave the workforce due to retirement or disability. In the skilled craft trades particularly, replacement is a significant factor as long-time, “baby boomer” journey level workers leave the labor force. Employers who are constantly seeking new workers or who experience a high turnover of staff are good candidates for sponsoring new apprenticeship programs.

The U.S. Bureau of Labor Statistics (BLS) publishes data on projected growth in employment by occupation, that includes projected job openings as a result of growth in the occupation and through replacement of existing workers that are projected to leave their jobs. Using this data measure, BLS data indicates that demand for workers in the traditional apprenticeship occupations that employ the most apprentices will remain strong. The chart on the following page, “Projected Job Growth in Top Apprenticeship Occupations,” highlights projected job growth for selected occupations in the building and construction trades. For each of these occupations, the demand is above or near the national average for all occupations.



Source: Data in graph is from the appendix to the November 2007 Monthly Labor Review, BLS



Source: Graph derived from: Percent change in employment occupations projected to grow fastest, 2006-16. "Tomorrow's Jobs," Occupational Outlook Handbook, 2008-09. p. 5.

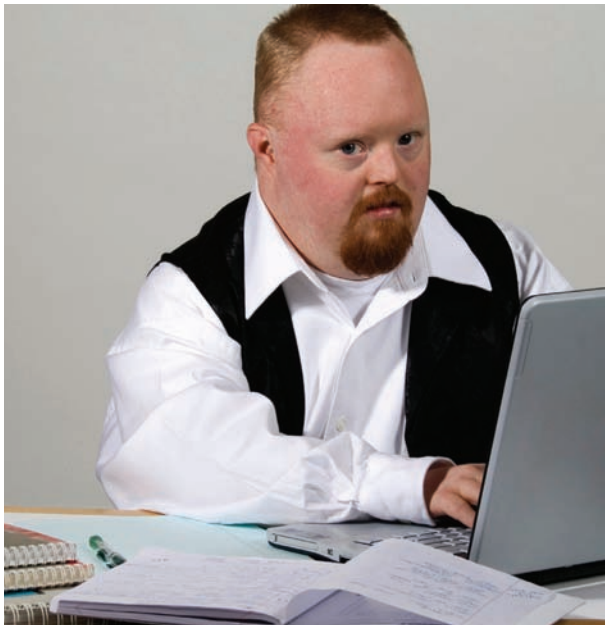
Many apprenticeship occupations outside the building and construction trades are also projected to be in high demand. For some, although the occupation is recognized, no apprenticeship programs have yet been registered. However, in most of these occupations, apprenticeship programs do exist albeit in relatively small numbers. National standards have been established for certain occupations with large employers and associations. National standards facilitate the registration of new apprenticeship programs because they provide a template that an affiliate business can use in putting together its training plan.

Other occupations provide interim certification opportunities through apprenticeship. The flexibility provided through such programs is likely to be useful in expanding apprenticeship opportunities to more people, including people with severe disabilities, because they allow for industry-related recognition of training skills acquired in a given occupational area, even if the individual does not complete the full apprenticeship program. Acquiring these skills will also allow workers who choose to do so to move incrementally towards completing an apprenticeship and still receive recognition for the skills that have been acquired. The interim credential can be useful in finding employment and may be particularly beneficial in designing customized apprenticeship programs for individuals with significant disabilities.

Apprenticeship occupations projected to grow by the largest percentages include personal and home health care aides, veterinary technologists and technicians, medical assistants, and pharmacy technicians. The medical service field is a high-growth industry that provides multiple pathways to certification through apprenticeship. For example, a certified nursing assistant apprenticeship is a three-year program, but there are four interim certifications, each of which requires less training to complete.

Pharmacy technician is another occupation that offers multiple pathways through apprenticeship. The occupation requires the equivalent of one year of work experience and training. However, there are related pharmacy support occupations that provide certifications based on fewer hours. The chart on the previous page, "Percent Change in Employment in Occupations Projected to Grow Fastest, 2006-2016," shows the anticipated increase in employment occupations for six high growth occupations that are also apprenticeable.

In 2008, the U.S. Department of Labor (DOL) issued changes to the rules on apprenticeship. These changes were intended to update the apprenticeship system to meet the demands of the future. Many of the changes, such as the interim credentials described earlier, expand opportunities for all workers, but particularly for individuals with disabilities. Other changes are designed to make apprenticeship appealing to a larger universe of employers. For more information on these changes, see: **www.doleta.gov/OA/pdf/Apprenticeship_Final_Fact_Sheet.pdf.**



Where to Go For More Information:

Career Voyages, a partnership between the U.S. Department of Labor and the U.S. Department of Education, provides young people with information on post-secondary education and employment. It gives a particular focus to high growth and emerging industries, in addition to discussing registered apprenticeship: **www.careervoyages.gov**.

A full list of occupations recognized by the U.S. Department of Labor as apprenticeable may be viewed at: **www.doleta.gov/OA/bul08/Bulletin_2008_15.pdf**. This bulletin was last updated in May 2008.

The **U.S. Department of Labor Bureau of Labor Statistics** annually publishes the Occupational Outlook Handbook to inform readers of the training, earnings, and job prospects offered by various careers. A 2008-09 article, "Tomorrow's Jobs," showcases future opportunities in the labor force: **www.bls.gov/oco/pdf/oco2003.pdf**.

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