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Innovations in Apprenticeship

5 Case Studies That Illustrate the Promise
of Apprenticeship in the United States

By Sarah Ayres Steinberg and Ethan Gurwitz September 2014

Center for American Progress



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Introduction and summary

In 2007, spurred by a projected skills gap in South Carolina’s workforce, state policymakers and the South Carolina Technical College System established an innovative apprenticeship program called Apprenticeship Carolina.¹ Today—after just seven years—Apprenticeship Carolina consists of around 700 employer partners and over 10,400 current and former apprentices.² This is just one example of many innovative apprenticeship programs emerging across the United States. From Vermont to Michigan to Washington state, governments, employers, workforce planners, and education stakeholders are making important new investments in this critical workforce training tool.³

As detailed in the recent Center for American Progress report, “Training for Success: A Policy to Expand Apprenticeships in the United States,” apprenticeship is a workforce-training model that combines on-the-job training with classroom-based instruction and has been proven to benefit employers, employees, and the overall economy.⁴ Apprenticeships allow businesses to meet the growing demand for skilled workers, and they lead workers to higher wages and better employment outcomes. Furthermore, they are a smart public investment. A recent study in Washington state found that for every \$1 in state investment in apprenticeships, taxpayers received \$23 in net benefits, a return that far exceeds that of any other workforce-training program in the state.⁵

Although apprenticeships have proven to be an effective workforce-training tool, the United States has been slow to pick up the model. The Department of Labor, or DOL, through its Office of Apprenticeship, administers a small system of registered apprentices. Last year, the United States had about 375,000 registered apprentices, including 164,000 new apprentices who started programs in 2013.⁶ Per capita, these figures fall far below those of other nations, such as England, Switzerland, France, Germany, and Scotland.⁷ England, with a population one-sixth the size of the United States, had more than five times as many new apprentices as the United States in 2012.⁸ In England, a recent effort to expand apprenticeships has led to significant benefits for both workers and employers.

English apprenticeship completers earn an average weekly wage 10 percent higher than that of noncompleters. Businesses report that apprentices have increased productivity; supplied a consistent, skilled labor force; reduced recruiting costs; and boosted employee retention.⁹

There are a number of obstacles that have prevented the United States from establishing a larger apprenticeship system, not least of which is a lack of awareness among both businesses and workers about the value and promise that apprenticeships hold. Additionally, despite recent efforts by DOL to expand their reach, American apprenticeships are still largely dominated by traditional occupations, such as those in the building and construction trades.¹⁰ Unlike the governments of many other countries, the U.S. government offers little financial support to help employers offset the costs of sponsoring apprentices.¹¹

This may be changing, however, as U.S. policymakers increasingly look to apprenticeship as a key tool to develop a skilled workforce and to connect workers to good jobs. The Obama administration is investing in apprenticeship by making \$100 million available for American Apprenticeship Grants through the DOL.¹² These funds will support promising partnerships, launch new apprenticeships in high-growth fields—such as information technology, health care, and advanced manufacturing—and scale models that work.

This report examines a suite of innovative apprenticeship models from around the country. It provides detailed case studies of Vermont Healthcare and Information Technology Education Center, or Vermont HITEC; the Michigan Advanced Technologies Training program, or MAT2; the SEIU Healthcare NW Training Partnership; the National Institute for Metalworking Skills, or NIMS, Certified Registered Apprenticeship program; and Apprenticeship Carolina. From effective marketing and business engagement to financial incentives and thorough skills assessments, these models exemplify a number of compelling strategies to expand apprenticeships into new occupations and sectors and to increase overall apprenticeship enrollment.

Vermont HITEC

Overview: Nonprofit organization that recruits, educates, and places apprentices in high-demand health care, information technology, and advanced manufacturing occupations using an accelerated pre-apprenticeship education model.

Sponsoring employers: Dartmouth-Hitchcock Health System; Fletcher Allen Health Care; Precyse; IDX Systems, now GE Healthcare; Dealer.com, now DealerTrack Technologies; Allscripts; Hypertherm, Inc.; Husky Injection Molding Systems; and Timken Company¹³

Occupations: Medical transcriptionists; medical coders; registration representatives; medical assistants; licensed nursing assistants; phlebotomists; pharmacy technicians; EHR go-live support specialists; IT interface analysts; software developers; web developers; IT

account managers; software support specialists; software installation consultants; computer numerically controlled, or CNC, machinists; and CNC machine operators¹⁴

Intermediary: Vermont HITEC, a nonprofit organization

Public funding: In 2011, Congress appropriated \$2 million to Vermont HITEC. In 2014, the U.S. Department of Labor awarded a \$1.5 million grant to a partnership between the Vermont Department of Labor and Vermont HITEC. Vermont HITEC also utilizes funding from the Workforce Investment Act, or WIA, to pay for on-the-job training contracts and support services for program participants during their education and apprenticeship.¹⁵

Over the past 14 years, Vermont HITEC has educated and placed more than 1,200 workers into apprenticeships with companies in health care, information technology, and advanced manufacturing.¹⁶ Vermont HITEC offers a unique approach to structuring an apprenticeship. The apprenticeship's classroom-based education component is frontloaded into an accelerated 10-week class that workers complete before joining a company as full-time, paid apprentices.¹⁷ Vermont HITEC has successfully applied this apprenticeship model to train workers in a wide range of high-demand occupations. To illustrate how the program works, this section describes the process by which the organization recruited, trained, and placed 14 medical coders into apprenticeships at Dartmouth-Hitchcock Medical Center in Lebanon, New Hampshire.

Dartmouth-Hitchcock Medical Center, or DHMC, is part of the Dartmouth-Hitchcock Health System, the largest employer in New Hampshire.¹⁸ DHMC partnered with Vermont HITEC in 2013 after struggling to hire enough medical coders. Medical coders handle patient records at medical facilities and interact with physicians and other professionals to make sure records are complete, accurate, and coded according to billing information classification standards. The occupation is projected to grow much faster than average over the next decade, making it one of the more difficult positions for health care employers to fill. As of 2012, medical coders earned an annual median wage of about \$34,000.¹⁹

Vermont HITEC agreed to develop the parameters of the education and apprenticeship program, recruit participants, and educate apprentices. In return, DHMC guaranteed jobs for all 14 medical coders and agreed to predefined wage step-levels for apprentices. Vermont HITEC worked with DHMC to write the job specification, identify the required technical and behavioral competencies, and determine graduation requirements. From there, Vermont HITEC was able to reverse-engineer a curriculum and education program by placing one of its instructors onsite at DHMC to perform the role of a medical coder. At the same time, Vermont HITEC launched a rigorous recruitment drive that resulted in more than 725 applicants for the 14 positions. They evaluated more than 400 of these candidates—not on the basis of technical skills or work experience, but on technical aptitude and soft skills such as work ethic, attitude, communication skills, and willingness to accept criticism.²⁰

After reviewing Vermont HITEC's prescreened applicant pool, DHMC selected 14 candidates to sponsor as apprentices. Importantly, all of the 14 individuals hired into the program were guaranteed jobs as medical coder apprentices for DHMC upon their successful completion of a pre-apprenticeship education program. Vermont HITEC does not train workers without an employment guarantee upfront for every successful graduate.²¹

Vermont HITEC then delivered the accelerated 10-week pre-apprenticeship education program, during which time the sponsored students were immersed in an intense learning experience that included both an academic component and a hands-on learning component. Students were in class nine hours per day for five days per week and had more than four hours of homework each weekday evening and eight hours of homework on weekends. At the end of 10 weeks, all 14 students met the technical and behavioral competency requirements for the job and graduated with college credit. Although grants fund all of the coursework and materials for the 10-week education program, students do not earn a wage while enrolled.²²

Upon completing the pre-apprenticeship, the students were immediately employed for one year as paid medical coder apprentices with DHMC. Vermont HITEC supported and mentored the apprentices with on-the-job training over the course of their apprenticeships, and DHMC mentors were also assigned to each apprentice. The apprentices' performances, measured against the metrics developed by Vermont HITEC, were tracked and reviewed on a monthly basis. Based on their performance, the apprentices received a merit-based wage increase every six months.²³

Because apprentices start out earning less than their fully titled salary, DHMC and other employers that hire apprentices through the Vermont HITEC model are able to apply those savings to cover some of the costs for mentors and additional instruction during the apprenticeship. On-the-job training contracts through the WIA also help cover these costs. As a result, employers spend little to no extra money and end up with teams of highly skilled, proven employees trained exactly to their specifications.

DHMC's medical coder apprentices will complete the apprenticeship program after one year with a DOL Registered Apprenticeship Certificate of Completion; academic credits from the Vermont State College System, which can be applied to either an associate's or a bachelor's degree at one of the state colleges; a DHMC employer-sponsored credential in the form of a certificate; and certification as a Certified Professional Coder from the American Academy of Professional Coders. Upon completing their apprenticeship, these individuals will move on to the next wage step-level as high-performing, full employees with the company.²⁴

Recruiting skilled workers is often especially challenging for employers located in rural areas. By enabling employers to build their own talent pools through apprenticeships, Vermont HITEC has made it possible for a number of companies to grow their businesses without leaving Vermont and New Hampshire. For example, Dealer.com, an automotive industry digital marketing company, considered relocating their Burlington-based business before their partnership with Vermont HITEC helped them successfully grow from 50 to more than 700 employees.²⁵ Their information technology apprentices went on to work as account managers, software developers, and web designers for the company now known as DealerTrack.²⁶ Moreover, the company reports that apprentices became very loyal and stayed on to become top performers.²⁷

Vermont HITEC has found that its model of apprenticeship can be adapted for almost any occupation and industry. Using it, the organization has recruited, educated, graduated, and placed:

- Nearly 400 CNC machinists and machine operators for employment with Hypertherm, an advanced manufacturing company based in Hanover, New Hampshire, and another 150 CNC machinists with small to medium-sized companies throughout Vermont and New Hampshire.²⁸
- More than 38 software engineers, software analysts, and support specialists for GE Healthcare—formerly IDX Systems Corporation and located in Burlington, Vermont—a health care information systems solution provider.²⁹
- Fourteen application software support specialists with Vermont Information Processing, a Colchester, Vermont, company that provides information systems accounting and data services solutions for more than 50 percent of U.S. beer distributors.³⁰
- More than 140 health care apprentices with Fletcher Allen Health Care, Vermont’s academic medical center. The apprentices are in positions ranging from practice support specialists and registration representatives to medical coders, electronic health records IT specialists, licensed nursing assistants, and phlebotomists.³¹

MAT2

In founding MAT2, Walter Maisel, the president and CEO of Kostal North America—an automobile parts supplier based in Germany—set out to develop a program that answered growing concern among manufacturers about the availability of a skilled workforce. Other regional employers joined Kostal and worked with the governor’s office, the state of Michigan, and community colleges to create an apprenticeship program modeled after the German dual system of vocational education and training, in which apprenticeship is incorporated into the secondary and postsecondary education systems.³³

MAT2 aims to meet the demand for skilled manufacturing workers by offering apprenticeships in mechatronics, technical product design, and information technology. Mechatronics is a new field that has emerged as a result of the increasing computerization of manufacturing processes. Mechatronics technicians must possess significant electrical, mechanical, and electronic skills in order to effectively design and test computer-controlled electromechanical systems. Technical product design technicians use computer-aided design software to make detailed product plans, from sketches to final blueprints and/or drawings. And IT technicians provide technical assistance to users of both desktop and mobile computers, upgrade system software and hardware, make recommendations about new technologies, and manage on-location servers.³⁴

To help the MAT2 program get started, the state of Michigan covered its administrative costs through a consultant who worked with the Michigan Economic Development Corporation, or MEDC. The participating companies finance

Overview: A consortium of small- and medium-sized manufacturers that came together to offer German-style apprenticeships in Michigan

Founding employers: Brose, Kostal, and ZF

Sponsoring employers: American Axle & Manufacturing Holdings, Inc., BorgWarner, Cadillac Products Packaging Company, Detroit Diesel Corporation, Dürr AG, Eberspaecher, EMAG, FRIMO, Heller, Hirotec America, Inergy, L.P., Jenoptik, Jervis B. Webb Company, Kern-Liebers, Kessler, Link Engineering Company, Magna International, The Oakwood Group, Pontiac Coil, Proper Group International, Secure-24, Siemens, SL America, Tyson Foods, Van Rob Kirchhoff Automotive Group, Weil Engineering North America, and Volkswagen Group of America³²

Sector: Manufacturing

Occupations: Mechatronics technician, IT technician, and technical product designer

Intermediary: Michigan Economic Development Corporation

Public funding: The state of Michigan paid for program start-up and administration costs.

tuition at the participating community colleges, as well as companies' program training costs. MAT2 also works with the U.S. Department of Labor and the German American Chamber of the Commerce to the Midwest to certify that it meets U.S. and international standards.³⁵

MAT2 is a three-year program in which apprentices rotate between periods of on-the-job training and periods of classroom instruction at the community colleges. Apprentices spend six or seven weeks in the classroom, studying a specialized curriculum tailored to the dual training model and to the high-level skills required by advanced manufacturers. Companies assign qualified, veteran employees to work with apprentices during each of the nine-week periods of on-the-job training.³⁶

Participating companies pay the apprentices' tuition, as well as a stipend for the time apprentices spend in classes and/or labs. Apprentices also earn an hourly wage that increases over time while completing their on-the-job training. In exchange for the companies' investment in their education and training, students commit to work for their sponsoring company for at least two years after completing the program. Upon graduation, apprentices will receive an associate's degree from the community college; a DOL Registered Apprenticeship Certificate of Completion; and a German DIHK-issued certificate, which is recognized by German employers around the world.³⁷

The program has proved popular so far. It launched in 2013 with the participation of two community colleges and 11 companies, most of them headquartered in Germany.³⁸ Today, the program includes four community colleges and 30 companies, including a mix of European, Asian, and U.S.-based firms.³⁹ In its first year alone, MAT2 received 200 applications for just 30 open spots.⁴⁰

SEIU Healthcare NW Training Partnership

Washington State's SEIU Healthcare NW Training Partnership is a nonprofit school formed by SEIU Healthcare 775NW and participating employers to train and develop professional long-term care workers. In 2013, the training partnership enrolled its—and the nation's—first class of Home Care Aide Registered Apprentices in a pilot program.⁴³

Home care aides provide in-home, nonmedical support to the elderly and people with disabilities. Aides empower their clients to live high-quality lives at home by assisting them with bathing, using the toilet, preparing meals, cleaning, and doing laundry. The home care aide, with a 2012 median annual wage of around \$21,000, is one of the fastest-growing occupations in the country. According to projections from the Bureau of Labor Statistics, the number of home care aide jobs in the United States will grow by 50 percent by 2022.⁴⁴

The program's home care aide apprentices are either employed by a participating home care agency or are individual providers employed by the state of Washington. To graduate from the program, an apprentice must complete 75 hours of basic classroom training, which is required by the state for all home care aides, and an additional 70 hours of advanced training. On-the-job training is provided in the form of 24 hours of peer mentoring from an experienced home care aide.⁴⁵

SEIU Healthcare NW pays for training, and apprentices earn their regular wages while completing the first 75 hours of basic classroom training. The second 70 hours of advanced training are not paid. Upon completing the program, apprentices must pass a state exam, which consists of 60 written questions and a skills demonstration. Apprentices then receive a \$0.50-per-hour pay increase and a DOL Registered Apprenticeship Certification of Completion.⁴⁶

Overview: A union-employer nonprofit training partnership that uses registered apprenticeships to meet workforce needs in home care.

Sponsoring employers: Addus Healthcare Inc., Amicable Health Care Inc., Catholic Community Services of Western Washington, CDM Services, Chesterfield Services, Coastal Community Action Program, Concerned Citizens, Full Life Care, Korean Women's Association, OlyCAP, ResCare of Washington Inc., Sea Mar Community Health Centers, Senior Life Resources Northwest, State of Washington⁴¹

Sector: Health care

Occupations: Home care aides

Intermediary: SEIU Healthcare NW Training Partnership

Public funding: The state of Washington pays into the training partnership as a participating employer and according to its collective bargaining agreement with SEIU.⁴²

Over the next five years, the training partnership plans to expand to reach more than 3,000 apprentices annually. Additionally, they will make training broadly available across the United States.⁴⁷ If successful, applying the apprenticeship model to entry-level health care occupations can improve worker skill development and establish career pathways. Moreover, apprenticeship has the potential to benefit health care providers in the form of more efficient recruitment and retention, lower training costs, higher-quality patient care, and a more diverse workforce.

NIMS Certified Registered Apprenticeship Program

Apprenticeship programs that incorporate industry-recognized credentials offer substantial benefits to workers and employers.⁵¹ The structure and evaluation of apprenticeships in an occupation can differ between states and employers, so adding national industry-recognized credentials to an apprenticeship program gives the worker greater currency and portability in the labor market. Furthermore, offering apprenticeships instead of simply recognizing credentials ensures employers are getting the right workers with the right skills to fill their job openings.

In 1995, a group of metalworking trade associations that today consists of at least 6,000 businesses formed NIMS to establish a uniform metalworking standard for various skills, a credentialing assessment to test competency, and an overall system to validate training programs.⁵² In 2003, with the assistance of more than 300 companies and the Department of Labor, NIMS created an apprenticeship program with a competency-based curriculum.⁵³

Apprentices must demonstrate required competencies as they progress through their training, earning a series of NIMS credentials along the way. There are a total of 52 NIMS certified credentials that fall under three different skill requirements: level 1, level 2, and level 3.⁵⁴ Level 3 is the most advanced. A NIMS certified apprenticeship requires a completed set of credentials.⁵⁵ Becoming a NIMS machinist, for example, requires learning 28 required competencies and earning 12 NIMS certified credentials.⁵⁶ These credentials act as performance assessments for NIMS apprentices. In addition to these required competencies, employers can customize the apprenticeship by adding competencies relevant to their own companies.⁵⁷

Overview: Employers joined with the National Institute for Metalworking Skills, or NIMS, to develop national guideline standards for apprenticeships that incorporate industry-recognized credentials.

Sponsoring employers: More than 300 companies participated in developing the NIMS Certified Registered Apprenticeship program.⁴⁸

Occupations: Machinist, toolmaker, CNC setup programmer, press setup operator, machine maintenance, and service and repair⁴⁹

Intermediary: National Institute for Metalworking Skills, or NIMS

Public funding: NIMS received more than \$1.95 million from the U.S. Department of Labor to start its apprenticeship project and also leveraged \$7.5 million in private investment for NIMS standards and assessments.⁵⁰

Because NIMS apprenticeships measure competencies instead of just time spent on the job, employees are able to learn at their own speed and accelerate if they are already advanced in a required competency.⁵⁸ Upon completion, NIMS-certified registered apprentices receive a DOL Registered Certificate of Completion, as well as credentials from NIMS.⁵⁹ Workers gain portable, industry-recognized credentials, and employers develop a skilled workforce. A training coordinator at one sponsoring company explained why the NIMS-certified registered apprenticeship program is more beneficial to the company than relying on certification gained solely through classroom instruction:

*NIMS works well for us because it forces our employees to prove both knowledge and skills. Most people can do some type of classroom training and pass a written test. But at the end of the day, they may or may not be able to run a piece of equipment.*⁶⁰

Apprenticeship Carolina

Overview: Over the past seven years, with a combination of marketing, technical assistance, and an employer tax credit, South Carolina has increased the number of employers offering apprenticeships by nearly 700 percent.⁶¹

Sponsoring employers: Today, around 700 employers sponsor apprenticeships through Apprenticeship Carolina, including large corporations such as The 3M Company, Caterpillar Inc., Duke Energy, *Blue Cross/Blue Shield Association*, Alcoa, Eaton Corporation, GE Aviation, Goodrich Corporation, and Pepperidge Farm, as well as many small and medium-sized employers.⁶²

Sector: Health care, advanced manufacturing, information technology, energy, tourism, transportation, construction, and logistics⁶³

Occupations: Apprenticeship Carolina supports all 950 occupations registered through the Department of Labor Office of Apprentice-

ship. If an occupation is not already registered with the Department of Labor, Apprenticeship Carolina provides a public consultant to walk the employer through the registration process. Some of the occupations pursued by South Carolina apprentices include aircraft structural maintenance technicians, certified nursing assistants, pharmacy technicians, utility workers, machine operators, and quality control technicians.⁶⁴

Intermediary: Apprenticeship Carolina, a division of the South Carolina Technical College System

Public funding: The South Carolina Technical College System received \$1 million in startup funding from the state legislature to launch Apprenticeship Carolina in 2007, and the program receives \$700,000 annually in state funding.⁶⁵ The South Carolina Workforce Investment Board allocated \$1 million in grant funding to spur participation among schools and businesses.⁶⁶ The state also provides a \$1,000 tax credit for every apprentice that a business hires.⁶⁷

Apprenticeship Carolina is a model public-private partnership, unique for its effectiveness and reach. Founded in 2007, Apprenticeship Carolina came about after a 2001 state-issued report highlighted the state's growing skills gap and a 2002 South Carolina Chamber of Commerce study found that the state was underutilizing apprenticeship as a workplace training tool.⁶⁸ Since then, South Carolina has seen a 680 percent increase in the number of employers sponsoring apprentices. In 2007, there were just 90 companies with registered apprenticeship programs; today, there are approximately 700.⁶⁹

Apprenticeship Carolina was created as an intermediary to promote apprenticeship and to directly engage with employers across the state, especially those outside the typical trade industries.⁷⁰ Apprenticeships can be sponsored by individual businesses, public-sector agencies, or through employer consortiums represented by a trade association or committee.⁷¹ To incentivize participation, the state created a \$1,000 tax credit, good for up to four years, for every apprentice that a business hires.⁷² At no cost to the employer, Apprenticeship Carolina also provides consultants to assist prospective businesses through each step of the apprenticeship process. This includes coordinating resources and assisting businesses in the drafting of apprenticeship standards, as well as facilitating collaboration with various stakeholders such as the South Carolina Technical College system and DOL's Office of Apprenticeship.⁷³

These efforts and incentives have allowed Apprenticeship Carolina to register an average of one new company per week.⁷⁴ Furthermore, apprenticeship programs can be found in a range of nontraditional industries, including agribusiness, biofuels, health care, information technology, advanced manufacturing, and tourism.⁷⁵

The partnership between South Carolina's public and private sector makes Apprenticeship Carolina a compelling model for expanding state apprenticeships. The private sector—through the South Carolina Chamber of Commerce and with state funding to support research—documented a skills gap, recommended apprenticeship as a tool to meet the demand for skilled labor, and identified some of the barriers preventing employers from sponsoring apprenticeships. State lawmakers responded by implementing strategies to increase employer engagement, including financial incentives, marketing, and technical assistance through Apprenticeship Carolina. The dramatic increase in South Carolina apprentices stands as testament to the effectiveness of this model.

Lessons

The efforts profiled in this report represent a range of strategies that enterprising worker training stakeholders have employed to establish apprenticeship programs in high-demand, nontraditional occupations. When it comes to creating an apprenticeship program that engages multiple employers, there is clearly more than one way to structure it. These case studies, however, reveal three important commonalities:

1. **A strong intermediary is key to a strong apprenticeship program.** Whether it is a nonprofit such as Vermont HITEC, a state agency such as Apprenticeship Carolina, or a joint labor-management program such as the SEIU Healthcare NW Training Partnership, a successful, far-reaching apprenticeship program will have a strong intermediary. The role of the intermediary is to coordinate between stakeholders, including employers, educational institutions, the Department of Labor, and state governments. An effective intermediary will also conduct outreach to employers and provide the technical assistance necessary to help employers establish a functional apprenticeship program.
2. **A little public investment goes a long way.** Each of the programs profiled in this report has leveraged public dollars to bring in private investment in worker training. For example, while South Carolina's modest \$1,000 employer tax credit does not fully cover the costs of sponsoring an apprentice—especially for the many small companies that may not even have tax liability with the state—it does serve as a vital marketing tool that brings employers to the table. As Apprenticeship Carolina has demonstrated, once employers are at the table, they stay.
3. **Industry-recognized credentials add value to apprenticeships in nontraditional occupations.** The Center for American Progress recently highlighted the value that industry credentials can bring to an apprenticeship.⁷⁶ Incorporating industry-recognized credentials into an apprenticeship program ensures that workers who complete their apprenticeship gain a credential that is nationally recognized and truly portable. As we discussed above, Vermont HITEC ensured that its medical coding apprentices were also certified as professional

coders from the American Academy of Professional Coders. Similarly, participants in the MAT2 apprenticeship program receive a German DIHK-issued certificate that will allow them to work for any German company around the world. Incorporating industry-recognized credentials into training programs strengthens the currency of apprenticeships.

State governments, nonprofits, employer associations, and other entities looking to develop strong apprenticeship programs should consider these lessons. By using a strong intermediary, leveraging public investment, and incorporating relevant industry credentials, they can build sustainable pipelines of talent that connect workers to good jobs in fast-growing, high-demand occupations.

Conclusion

In advanced economies around the world, large shares of young people enter the labor market through apprenticeships. Yet apprenticeship remains relatively unknown in the United States, especially outside the building and construction trades. This centuries-old earn-while-you-learn model has the potential to play a much more prominent role in America's education and training system.

To date, a handful of enterprising nonprofits, training providers, companies, employer associations, and states are leading the way in developing innovative new methods of offering apprenticeships in the United States. The case studies documented in this report highlight a set of tools that these apprenticeship programs have successfully harnessed. These include using strong intermediaries to coordinate between stakeholders, engaging employers through outreach and technical assistance, and developing standards for apprenticeships in targeted high-demand, high-growth fields and occupations. As policymakers look to expand apprenticeship in the United States, they should consider how to build upon, learn from, and replicate some of these exciting new programs.

About the authors

Sarah Ayres Steinberg is a Policy Analyst with the Economic Policy team at the Center for American Progress. She is the co-author of “Training for Success: A Policy to Expand Apprenticeships in the United States.” Her work covers a range of issues affecting shared economic growth, including apprenticeship, youth participation in the economy, the middle class, employment, and postsecondary education. Her work has been cited by *The New York Times*, *The Wall Street Journal*, *The Washington Post*, and *Fortune*, among others. She has also appeared on MSNBC, Fox News, and NPR.

Prior to joining CAP, Sarah handled economic and financial policy as legislative assistant to Congressman Rick Boucher (D-VA), a senior member of the Energy and Commerce Committee. She has worked on a number of national, state, and local campaigns in her native New Hampshire, including managing the field campaign for Gov. John Lynch (D) in 2008.

Sarah has a bachelor’s degree in government and sociology from Dartmouth College. She grew up in Hanover, New Hampshire.

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