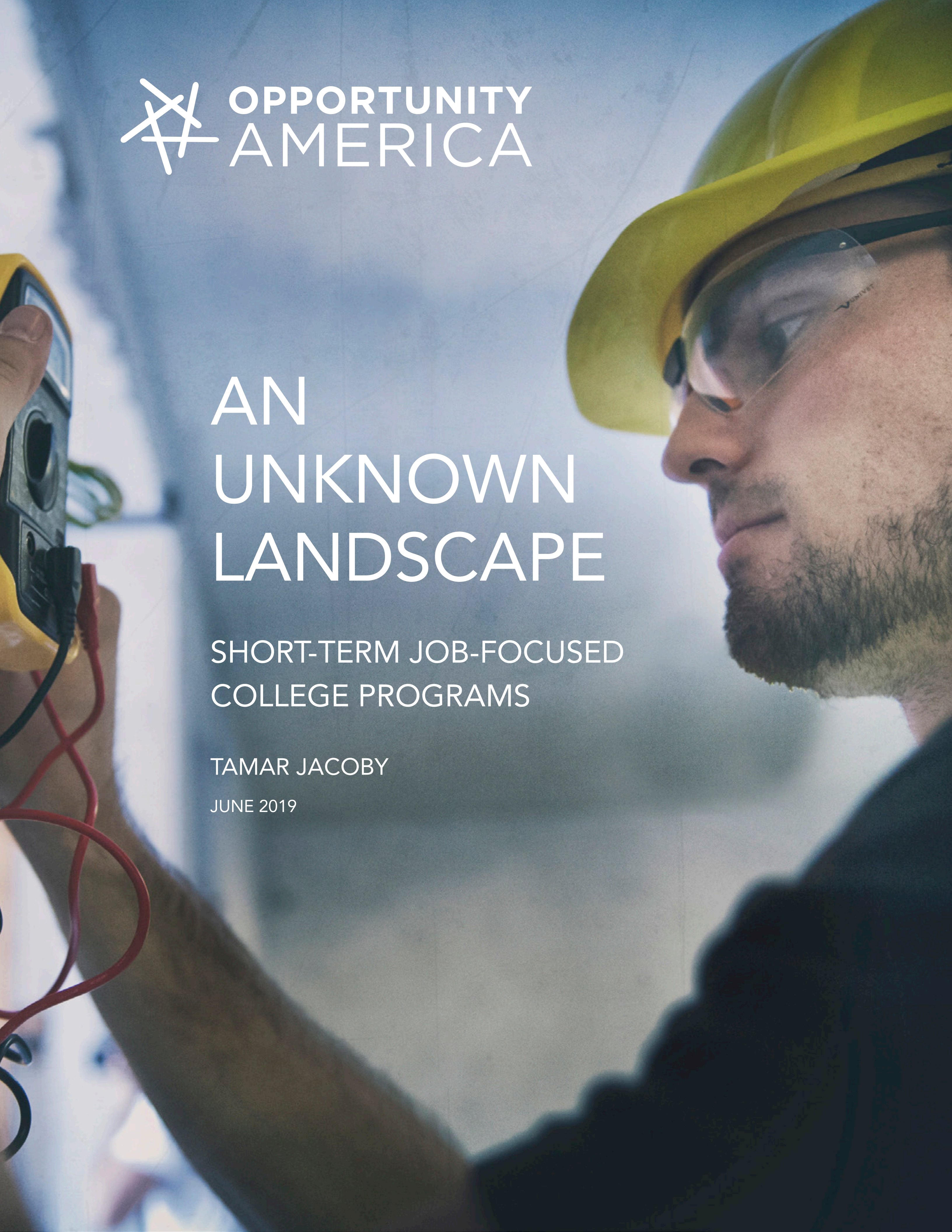

OPPORTUNITY AMERICA

AN UNKNOWN LANDSCAPE

SHORT-TERM JOB-FOCUSED COLLEGE PROGRAMS

TAMAR JACOBY

JUNE 2019

OPPORTUNITYAMERICA

AN UNKNOWN LANDSCAPE

SHORT-TERM JOB-FOCUSED COLLEGE PROGRAMS

TAMAR JACOBY

JUNE 2019

ABOUT THE AUTHOR

Tamar Jacoby is president of Opportunity America, a Washington-based nonprofit working to promote economic mobility—work, skills, careers, ownership and entrepreneurship for poor and working Americans. A former journalist and author, she was a senior writer and justice editor at *Newsweek* and, before that, the deputy editor of *The New York Times* op-ed page. Her articles have appeared in *The New York Times*, *The Wall Street Journal*, *The Washington Post*, *The Weekly Standard* and *Foreign Affairs*, among other publications. She is the author of “Someone Else’s House: America’s Unfinished Struggle for Integration” (Free Press, 1998). Her edited volumes include “Reinventing the Melting Pot: The New Immigrants and What It Means To Be American” (Basic Books, 2004) and “This Way Up: New Thinking About Poverty and Economic Mobility” (American Enterprise Institute, 2017).

ABOUT THE ORGANIZATION

Opportunity America is a Washington-based nonprofit promoting economic mobility—work, skills, careers, ownership and entrepreneurship for poor and working Americans. The organization’s principal activities are research, policy development, dissemination of policy ideas and working to build consensus around policy proposals.

ACKNOWLEDGEMENTS

The author thanks the instructors and administrators at eight two-year colleges who gave their time to help us understand short-term job-focused programs at their institutions—Dallas County Community College District, Indian Hills Community College, Lord Fairfax Community College, Northern Virginia Community College, Ranken Technical College, San Jacinto College, St. Louis Community College and Texas State Technical College. The Institute for College Access and Success provided thoughtful suggestions on project scope and design. Special gratitude goes to the Joyce Foundation for its generous support of the project.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The economy is changing and with it, America's demand for labor. A high school diploma is rarely enough, but not every student needs a college degree.

For some learners, the best answer is postsecondary education or job training that equips them with skills in demand in the labor market. Programs vary widely; they are offered in a variety of settings. Those available at colleges are often shorter than a semester and decoupled from conventional college course work.

Yet under current law, little federal financial aid is available for short college offerings of this kind.

Legislation pending in the Senate would amend the Higher Education Act to provide Pell Grant funding for shorter, career-focused programs.

Advocates for the proposal, sometimes called "workforce Pell," contend that today's changing economy argues for a broader definition of higher education. Workers need more sophisticated skills. Short job-focused programs can boost workers' earnings and narrow wage gaps. Institutions of higher education are adapting to the changing economy, advocates argue, but federal education policy isn't keeping up.

Skeptics worry that many programs that would be eligible for workforce Pell are unaccredited and therefore of questionable quality, putting students and taxpayers at risk. Skeptics also question using federal financial aid—spending earmarked for higher education—for job-training programs that are eligible for other, job-focused federal funding, including the Workforce Investment and Opportunity Act (WIOA).

More information is needed to inform this debate. What is the scope and scale of short-term job-focused offerings nationwide? What is their payoff for students? How should policymakers determine which programs are eligible for financial aid? What accountability mechanisms are needed to protect students and taxpayers? This paper begins to answer these questions.

> Advocates for workforce Pell say today's changing economy argues for a broader definition of higher education.

Opportunity America visited eight short job-focused programs on a diverse array of campuses. Eight programs are a small sample. But together, the campuses we visited offer a window on the kinds of short-term job-focused offerings that could be covered by workforce Pell.

Short career-focused programs are in strong demand among students and employers in the labor markets we visited. College administrators are convinced that the need will only grow as technological change accelerates, transforming many existing jobs and creating new ones. When asked if their programs were meeting local labor market needs, educators on all eight campuses gave a version of the same answer: "Yes, but." Their offerings address demand but far from satisfy it, and if additional federal funding were available, more could be done to train workers for local jobs.

Also clear at all the colleges we visited: short-term career-focused programs struggle to make ends meet. Institutions are under financial pressure. Students stretch to pay for tuition. Federal and state workforce dollars sometimes help defray the cost. But at no college we visited did federal workforce funding alone appear to be a sustainable source of support for students enrolled in short job-focused programs.

The challenge for policymakers: how to craft federal financial aid for short-term programs that measures effectiveness and rewards quality. The educators we interviewed had suggestions. They want to be held accountable with performance metrics appropriate to their mission—job training, not academic education. Program outcomes—student employment outcomes—are a better yardstick than inputs. Among those best positioned to judge career-focused programs are employers who hire graduates. Industry-recognized credentials can be an effective proxy—for employer demand and employability.

Many of the short job-focused programs we visited are held to account by market discipline. What matters to employers and students paying out of pocket are outcomes—job outcomes. And programs that don't meet the needs of students and employers do not survive. Public funding for short-term programs should come with the same kind of discipline—rigorous expectations and pressure for strong student outcomes.

INTRODUCTION

The economy is changing and with it, America's demand for labor. Traditional blue-collar jobs are giving way to more highly skilled, more technical positions. Workers in virtually all industries need technical savvy and critical thinking to succeed on the job. A high school diploma is rarely enough, but not every student needs a college degree.

For some learners, the best answer is postsecondary education or job training that equips them with skills in demand in the labor market. Programs vary widely; they are offered in a variety of settings. Those available at colleges are often shorter than a semester and decoupled from conventional college course work. Shorter programs can be particularly appealing to older students and those juggling work, school and family, in a hurry to get a job or a better job.

Yet under current law, little federal financial aid is available for short college offerings of this kind. In 2018, the Pell Grant program disbursed $28.2 billion in needs-based subsidies to cover college costs for some 7 million eligible undergraduates.[1] But in practice grants can be used to pay only for credit-bearing programs offered at accredited institutions that are at least a semester in length—600 clock hours or 16 semester hours offered over the course of at least 15 weeks.[2]

Legislation pending in the Senate would amend the Higher Education Act to provide funding for shorter, career-focused programs—short credit-bearing programs, but also some non-credit-bearing instruction offered by college continuing education divisions. The Jumpstart Our Businesses by Supporting Students (JOBS) Act cosponsored by Sens. Rob Portman (R-OH) and Tim Kaine (D-VA) would reduce the minimum Pell requirement to 150 clock hours over a period of eight weeks.[3]

Advocates for the proposal, sometimes called "short-term Pell" or "workforce Pell," contend that today's changing economy argues for a broader definition of higher education. Workers need more sophisticated skills. Short job-focused programs can boost workers' earnings and narrow wage gaps. Institutions of higher education are adapting to the changing economy, advocates argue, but federal education policy isn't keeping up.

For some learners, the best answer is postsecondary education or job training that equips them with skills in demand in the labor market.

Skeptics worry that many programs that would be eligible for workforce Pell are unaccredited and therefore of questionable quality, putting students and taxpayers at risk. Skeptics also question using federal financial aid—spending earmarked for higher education—for job-training programs that are eligible for other, job-focused federal funding, including the Workforce Investment and Opportunity Act (WIOA).

More information is needed to inform this debate.

Surprisingly little is known about shorter programs that could be covered by Pell Grants under the JOBS Act or similar legislation. Among unanswered questions: What is the scope and scale of these offerings nationwide? What is their payoff for students? How should policymakers determine which programs are eligible for financial aid? What accountability mechanisms are needed to protect students and taxpayers?

This paper begins to answer these questions.

Opportunity America visited eight short-term job-focused programs on a diverse array of campuses. We toured facilities, interviewed administrators and spoke with students enrolled in shorter programs.

Each site visit lasted a half day, and in some cases we followed up with additional phone interviews.

The first section of the paper describes the programs we visited: what kinds of courses are being offered at what types of institutions? The second section addresses funding: how much do these programs cost, and how do students currently cover the cost?

The last section explores outcomes and accountability. How much is known about student outcomes, including completions, job placements and post-graduation earnings? How are short-term programs held accountable for student success, and are existing measures adequate to protect against low-quality programs?

MAPPING THE LANDSCAPE

Short-term postsecondary education and training comes in all shapes and sizes.

Hundreds of thousands of programs are offered nationwide by many different kinds of noncollege education and training providers, including boot camps, community organizations, nonprofit groups, for-profit training centers, labor unions and employers, among others. This paper focuses solely on programs provided by institutions eligible for federal financial aid—two and four-year colleges.

But even within this subcategory, offerings vary widely along a number of dimensions: length, cost, types of students served, how programs are funded and whether or not students earn college credit or other credentials.

Opportunity America considered a wide array of programs in deciding which to include in the study. Eight programs are a small sample, not representative of the national landscape, and in the absence of data, it's impossible to draw a definitive map of short-term postsecondary offerings. But we took steps to make our selection as diverse as possible—credit-bearing and noncredit programs of varying lengths, offered by a variety of institutions and serving different types of students, among other variables. We focused on four states where state data or state administrators could help us identify programs to visit.

What institution. Some four-year nonprofit institutions offer shorter courses, usually in their continuing education divisions. So do some for-profit colleges. But neither type of institution has embraced the shorter model as widely or enthusiastically as community colleges.

We focus on two-year colleges and explore programs at a range of institutions: large community colleges in urban and suburban settings, small community colleges serving remote rural areas and one private, nonprofit two-year institution.

What division. Many community colleges offer two different types of occupational instruction—credit-bearing programs that culminate in college degrees and certificates and noncredit-bearing programs offered by the college's continuing education division.

Continuing education varies widely from campus to campus. At some colleges, the emphasis is on job-focused programs. Other institutions offer a mix of occupational and recreational offerings. And programs vary in length—some semester-length, some shorter.

The JOBS Act would extend Pell funding to credit and noncredit programs that meet some half dozen key criteria: short-term occupational offerings aligned with other educational opportunities and labor market needs that lead to credentials recognized by employers and approved by state authorities.

Short-term postsecondary education and training comes in all shapes and sizes.

In selecting programs for this study, we looked for shorter job-focused offerings on both sides of the college—credit and noncredit. We found relatively few if any in most colleges' credit-bearing course catalogues and none in strictly academic subjects with no practical application in the labor market. It remains unclear if this is the case nationally.

We excluded two broad swaths of the noncredit landscape: we explored no recreational courses or employer-funded contract training.

See the box on pages 7 and 8 for more about noncredit continuing education.

Program length. Programs we visited vary in length from 88 contact hours offered over eight weeks to more than 400 contact hours offered over the course of a semester. Some of these offerings would be eligible for Pell grants under legislative proposals being considered in Congress; others would not.

Students. What type of students enroll in shorter programs? Many of the programs we visited are geared to older learners. Several college administrators told us about students in their late 20s and early 30s who had held a variety of entry-level jobs, often moving in and out of the labor market, but then, as one educator put it, realized that "life is serious"—they wanted a better-paying job and needed new, more sophisticated skills.[4] Other programs seem equally focused on traditional college-age students.

Career preparation. Several of the programs we visited prepare learners for blue-collar occupations—plumber, electrician, truck driver, automotive repair technician. Others are geared to allied health professions: certified nursing assistant and patient care technician. One program prepares students for white-collar work in the IT sector.

Job trajectory. The majority of the programs we visited were designed to train students—either entry-level workers or career-switchers—before they were hired. But students in several other programs were already employed in the job they were training for, often as apprentices, combining classroom learning in a college setting with on-the-job training at a company.

Aligned with the local labor market

Among the most important questions about any short-term college program: how and to what extent is it geared to demand in the local labor market? Offerings vary widely, and the JOBS Act would extend Pell funding only to programs closely aligned with local labor market needs.

The educators we spoke with gauge labor market demand in a number of ways.

First, virtually all the programs we visited rely on statistical labor market information—data on economic trends, in-demand skills, emerging gaps between supply and demand for workers—provided by state authorities or purchased from data analytics firms.

Second, most of the programs we visited supplement this data with outreach to employers in their communities.

Some colleges survey local employers. In other cases, the information-gathering is more informal—casual conversations around town, participation in local workforce development boards, attending Chamber of Commerce and Rotary Club meetings.[15]

In still other instances, colleges work closely with local employers to design curriculum or coordinate classroom learning with on-the-job training.[16] At several of the programs we visited, employers were covering most or all of the cost—equipment and tuition.[17]

"You need both kinds of input," said an administrator of one noncredit continuing education program, "both quantitative and qualitative labor

Colleges work closely with local employers to design curriculum and coordinate classroom learning with on-the-job training.

THE HIDDEN COLLEGE

Noncredit continuing education, sometimes called the "hidden college," goes all but unnoticed by the wider world, unknown to anyone but the students and employers who rely on it for job training and other popular offerings.[5]

The continuing education division is often administered separately from the rest of the college. Courses are offered à la carte and outside the usual semester schedule. Students need not matriculate at the college; they simply sign up for the class or classes that interest them.

Because programs are not offered for credit, they are not subject to oversight by a postsecondary accreditation agency. No matter how long or short the instruction, noncredit students are ineligible for federal financial aid, and their time spent in class does not count toward a credit-bearing certificate or degree.

As the name implies, much remains unknown about the hidden college.

Most states do not require colleges to report noncredit enrollments, and the federal government collects no data on noncredit higher education—no information on numbers of students, programs, program completions or post-graduation outcomes.

The American Association of Community Colleges estimates that five million students—more than 40 percent of those who attend two-year institutions—are enrolled in noncredit programs.[6] But this number is based on a survey conducted more than a decade ago, and it remains unclear if enrollments have waxed or waned in the years since.[7]

What is known: continuing education is a broad category, and offerings vary widely from college to college.

It's often a mix of three ingredients: classes geared to students' personal interests and hobbies, customized training that colleges provide on contract for local employers seeking to upskill existing employees, and open-enrollment occupational education designed for students—often older students—seeking to learn a career or technical skill without meeting the academic requirements of the college's credit division.

Some colleges mix these three ingredients equally.[8] Others, including the nation's second largest two-year institution—Northern Virginia Community College (NOVA)—are phasing out personal interest courses and customized training to focus all but exclusively on career education designed to prepare students for jobs in the local economy.[9]

Some noncredit programs are semester-length, some shorter. The JOBS Act would extend Pell funding to cover some but not all noncredit offerings—probably, given the criteria stipulated in the legislation, only a relatively small percentage.

The community college noncredit division brings a number of advantages to career education. In contrast to other college administrators, who often see workforce training as a second-tier objective, for many noncredit educators, it's a priority—their core mission.

Many noncredit administrators have strong relationships with local employers; they've been training for them for years and see them as among their primary clients.

Perhaps most important, the noncredit division can move quickly and nimbly—usually much

Noncredit students are ineligible for federal financial aid.

more quickly than the credit division.[10] Administrators don't have to answer to faculty governance committees or regional accreditors. When they see demand for job training, whether from students or employers, they can launch it immediately, standing up a new program in a matter of weeks or months—a process that often takes up to two years on the credit side of the college.[11]

This speed and agility is highly prized by employers, who often need to respond quickly to a changing market or new technology, and a growing number of companies nationwide are looking to a community college noncredit division as their training partner of choice.[12]

For students seeking career education, noncredit programs come with some disadvantages—no college credit, no financial aid, often little or no state funding for students or institutions and generally little external oversight of program quality.

But students too are often in a hurry, eager to enter or return to the job market. Older students already working and supporting a family can take only so much time away from their current jobs to learn a new skill that would get them a better job. A growing body of research confirms what we heard from several educators we interviewed: many older students return to school to acquire a skill, not a diploma.[13]

> The noncredit division can move quickly and nimbly to keep up with changes in local labor market demand.

"You don't need two years to learn a craft skill," one instructor explained. "We can pad courses and add things to get to semester length, and sometimes we do—so students can get financial aid. But for many students, it's more important to learn the skill and get the job—as soon as possible."[14]

For college administrators, eager to satisfy demand from employers and students, the answer is often shorter noncredit programs, less than a semester in length.

market information. That's what I spend most of my day doing—talking to employers and learning what they need."[18]

Third, an increasingly popular approach that would be encouraged by the JOBS Act, many of the colleges we visited work to align their occupational offerings with competency-based industry credentials.

Students enrolled in the programs we toured earned a variety of traditional credentials, including credit-bearing college certificates, noncredit awards of completion and state licensure. But in many cases, these familiar awards now come with—or are giving way to—a newer type of credential. Three out of eight programs we visited culminate in assessments developed by industry associations—credentialing bodies such as the National Center for Construction Education and Research (NCCER) and the IT industry association CompTIA.

The best industry credentials signal skills in demand across an economic sector. Industry credentialing groups canvass employers across their sectors to develop job profiles—detailed lists of the skills workers need, occupation by occupation and job by job. The industry body then translates these job profiles into standardized assessments—generally end-of-course, written or hands-on performance tests. Learning still takes place at a college or other training provider. But success is measured by the industry assessment rather than by time spent in class.[19]

Administrators at the programs we visited counted on one or more local employers to identify certifications of value—which credential or credentials best measured the skills workers need to succeed at their companies.

But several educators emphasized a distinction between skills required at a single firm and skills in demand across an industry, and they looked to industry backing as a sign that employers across the sector—locally and nationally—would value the certification when hiring or promoting workers.

It was hard to tell how accurately any of the programs we visited were in assessing local labor market needs or aligning college offerings with jobs available in their regions.

There is no metric to measure employer engagement in postsecondary education or training, and many colleges are ill-equipped to track employment outcomes.

The broader lack of state and federal data about short-term programs—credit-bearing and noncredit—adds to uncertainty about students' labor market outcomes. And even programs that prepare students to earn industry credentials don't always know who sits for or passes certification tests. Both students and credentialing bodies report this information erratically if at all.[20]

Where this left us: we had few means to assess labor market alignment other than conversations with college administrators.[21]

Most of the educators we interviewed seemed fairly confident they were aiming for the right targets—occupations in demand in the local labor market. "We know because the market tells us," explained one administrator. "Repeat business. Returning customers. Employers and students who think we're offering effective job preparation."[22]

The noncredit administrators we spoke with seemed particularly sensitive to local labor market needs, and according to the educators, this is no accident.

Although students enrolled in short credit-bearing programs have no access to federal financial aid, most credit divisions receive per-student subsidies and other funding from state authorities.

Noncredit programs, in contrast, often receive little or no per-student subsidy. And without access to either state funding or federal financial aid, administrators told us, many noncredit programs live or die by satisfying their customers—employers seeking workers and students preparing for jobs.

"If we weren't meeting local labor needs," one noncredit college dean explained, "we would have had to close our doors long ago."[23]

See the box on pages 10 to 13 for a more detailed description of the programs we visited.

EIGHT PROGRAMS

DALLAS COUNTY COMMUNITY COLLEGE DISTRICT

The Dallas County Community College District (DCCCD) brings together seven separate colleges under one administrative umbrella. Each campus maintains a distinct identity aligned with the character and needs of its community—seven diverse neighborhoods in the sprawling Dallas metro area. But district governance is centralized, and students can move from campus to campus, choosing classes from a single, system-wide catalogue. Some 90,000 students pass through the system each semester, about 10 percent in noncredit continuing education courses and the rest pursuing credit-bearing certificates and degrees. Somewhat unusually, all DCCCD colleges offer shorter programs on the credit side of the house.

One credit-bearing shorter offering trains automotive chassis technicians. Students accumulate 15 credit hours over the course of a semester and earn a credit-bearing certificate—a credential that can later be counted, if the student takes additional courses, toward an associate or bachelor's degree. Some students rely on state financial aid or pay out of pocket, but more often, an employer covers the cost of tuition.[24]

Program length: 15 credit hours over 15 weeks.

Cost: $885.

Automotive technicians in Dallas earn an average $20.46 per hour or $42,550 per year, according to the Bureau of Labor Statistics.[25] The job of a chassis technician: diagnosing and repairing automotive steering systems, suspensions and brakes, among other components.

INDIAN HILLS COMMUNITY COLLEGE

Indian Hills Community College serves 10 sparsely populated rural counties in south central Iowa. Some 10,000 students pass through the college each year, roughly 60 percent of them in noncredit continuing education courses, the rest working toward credit-bearing certificates and degrees. Some of the college's noncredit offerings cater to students' personal interests and hobbies; others focus on job skills.

One full-time, three-week noncredit course trains certified nursing assistants (CNAs)—a job in high demand in local long-term-care facilities. The same curriculum, stretched over 12 weeks, is offered in the college's credit division. But most students prefer the shorter course—a quicker route to a job. Some 60 percent of students enrolled on the credit side of the college are Pell-eligible and may use Pell dollars to pay for CNA training. Students taking the noncredit course must find alternative funding. Some cover their own tuition. Others leverage Iowa state support for short, job-focused, noncredit programs. In other cases, local long-term-care facilities pick up the cost. Students who pass end-of-course written and hands-on exams are eligible to work as CNAs in the state of Iowa.[26]

Program length: 75 contact hours over three weeks.

Cost: $840, including books and assessments.

Nursing assistants in southeast Iowa earn between $9 and $14.50 per hour, according to Glassdoor, Indeed and Iowa Workforce Development.[27] The job of a CNA: feeding, bathing and dressing patients, taking their vital signs, serving meals, making beds, setting up medical equipment and observing changes in a patients' condition or behavior.

LORD FAIRFAX COMMUNITY COLLEGE

Lord Fairfax Community College serves seven rural counties in Virginia's Shenandoah Valley. An estimated 18,000 students pass through the college each year, half of them working toward credit-bearing certificates and degrees, the other half in noncredit courses, almost all of which are job-focused. Roughly half of these noncredit students receive customized contract training paid for by employers—company-specific upskilling for existing employees. Other noncredit programs are open to anyone who enrolls.

One new open-enrollment noncredit offering developed in partnership with a local trade association trains heavy equipment operators. Students attend evening and weekend classes, train on state-of-the-art simulation equipment—cheaper for the college than bulldozers and earthmovers—and earn a nationally recognized industry credential from the National Center for Construction Education and Research (NCCER). Many students are able to defray up to two-thirds of tuition costs with state dollars—a new pay-for-performance initiative designed to promote workforce credentials.[28]

Program length: 165 contact hours over eight weeks.

Cost: $2,748.

Paving and surfacing equipment operators in Virginia earn an average $16.13 per hour or $33,540 per year, according to the Bureau of Labor Statistics.[29] The job: operating trucks and other heavy machinery, including bulldozers, earthmovers, backhoes, man-lifts and snowplows, also maintaining such equipment.

NORTHERN VIRGINIA COMMUNITY COLLEGE

Northern Virginia Community College (NOVA) is the nation's second largest public two-year institution, with more than 82,000 students attending classes on six campuses. Some 90 percent of students are pursuing credit-bearing certificates and degrees; the rest take noncredit courses, virtually all of them job-focused. Scores of internet data centers dot the surrounding counties, creating demand for an estimated 100,000 IT technicians over the next decade, and many of NOVA's offerings cater to IT workers.

One full-time, 11-week noncredit program prepares entry-level data center techs for an apprenticeship at Amazon Web Services (AWS). Students must be veterans, military spouses or transitioning out of the armed forces. They are hired by AWS before entering NOVA and earn competitive wages for the time they spend in class. NOVA training prepares them to earn industry-recognized credentials—from CompTIA, Cisco, Linux and AWS. After completing the program, students are expected to spend an additional year learning on the job at the company. Amazon and Seattle-based nonprofit Apprenti cover the cost of NOVA tuition.[30]

Program length: 330 contact hours over 11 weeks.

Cost: $12,000.

AWS data center techs can earn $28 an hour or $60,000 a year, according to Glassdoor.[31] The job: troubleshooting and repairing servers, diagnosing data center hardware and replacing or decommissioning failed components.

RANKEN TECHNICAL COLLEGE

Ranken Technical College is a private, nonprofit institution located in a blighted urban neighborhood of St. Louis—only one zip code in the US has more abandoned buildings. Founded more than 100 years ago by a civic-minded industrialist committed to "the dignity of work," Ranken focuses exclusively on technical training. Students are recruited from across the US and graded on their work ethic as well as their academic performance. Some 2,000 students are enrolled in credit-bearing courses; another 600 to 700 are in noncredit programs offered in partnership with employers, many of them micro-enterprises run by the college.

One intensive credit-bearing program prepares students for a plumbing apprenticeship. Virtually all instruction is hands-on. Students take just two general education courses—technical communication and career skills—and earn a college certificate before going to work as an apprentice for a sponsoring contractor. Some students cover part of the cost of tuition with state scholarship dollars. In many cases, a sponsoring employer picks up the tab.[32]

Program length: 12 credit hours over 16 weeks.

Cost: $9,490 including books, tools and supplies.

Plumbers in St. Louis can earn between $10 and $36 per hour or between $21,000 and $75,000 per year, according to PayScale.[33] The job: installing and repairing home appliances and fixtures, waste disposal systems and water supply lines.

ST. LOUIS COMMUNITY COLLEGE

St. Louis Community College serves a sprawling metro area, once sustained by manufacturing, now finding a footing in the postindustrial economy. Some 36,000 students pass through the college each year, 60 percent of them in noncredit programs, the rest working toward credit-bearing certificates and degrees. The college won four Obama-era Trade Adjustment Assistance Community College and Career Training (TAACCCT) grants and leveraged them to upgrade short, noncredit courses developed in partnership with local employers.

One full-time, nine-week offering trains patient care technicians (PCTs), who start the program on campus, then finish in a clinical setting at a local hospital. With TAACCCT grants now discontinued, the college is struggling to cover the cost of the program with contributions from partnering hospitals and other federal dollars—WIOA funding, US Health and Human Services Health Profession Opportunity Grants (HPOG) and US Department of Agriculture SkillUP subsidies for Supplementary Nutrition Assistance Program (SNAP) recipients. Students who complete the course are eligible to work as unlicensed assistive personnel in the state of Missouri.[34]

Program length: 300 contact hours over nine weeks.

Cost: $3,200.

Patient care technicians in St. Louis earn an average $25,691 per year, according to Glassdoor.[35] The job: serving meals, changing bedding, assisting patients in the restroom, monitoring vital signs and providing emotional support to patients and families.

SAN JACINTO COLLEGE

San Jacinto College is a public two-year institution in Pasadena, Texas, just east of Houston, home to dozens of oil refineries and other petrochemical facilities. An estimated 38,000 students pass through the college each year, nearly 80 percent of them pursuing credit-bearing certificates and degrees, the rest in noncredit programs. A growing number of large industrial construction contractors that service Houston refineries are requiring employees to hold industry-recognized certifications, and San Jacinto has seen an upswing in adult workers coming back to school to prepare for certification tests.

One 10 to 15-week noncredit course trains entry-level electrical workers. An industry credentialing body, the National Center for Construction Education and Research (NCCER), provides curriculum, and students prepare for NCCER assessments. Classes are held in the evening. Some students already work in the refineries; others are looking for a way in. A group of Houston-area contractors—the educational arm of the local Associated Builders and Contractors—tithe themselves to raise money for tuition.[36]

Program length: 120 contact hours over 10-15 weeks.

Cost: $714.

Electrician helpers in Houston earn an average $17.75 per hour, or $36,920 per year, according to the Bureau of Labor Statistics.[37] Entry-level electrical workers on industrial construction crews test, repair and adjust electrical fixtures, perform electrical tests on power equipment, document problems found and corrective action taken or recommended.

TEXAS STATE TECHNICAL COLLEGE

Texas State Technical College (TSTC) is a state-supported, statewide institution: some 13,000 students attend classes on 10 campuses that exist alongside and entirely separate from the state community college system. Under a unique funding formula, the college's annual state subsidy is based on students' post-graduation earnings—how much those earnings exceed the minimum wage and how much graduates contribute to state tax revenue. The college tries whenever possible to package content in semester-length, credit-bearing programs eligible for federal financial aid, and all but about 10 percent of students are pursuing credit-bearing certificates and degrees.

One exception—one course too short to stretch over a semester—trains commercial truck drivers, currently in high demand across the state. It's a full-time, four-week program, about 20 percent in a classroom, the rest on the road in a truck, that prepares students to sit for a state licensure exam. By community college standards, it's an expensive course: more than $4,500 for four weeks. Some students cover the cost with WIOA dollars, SNAP training subsidies or Post 9/11 GI Bill assistance. Others take out Sallie Mae loans. Still others pay out of pocket.[38]

Program length: 160 contact hours over four weeks.

Cost: $4,642, including fees and assessments.

Tractor-trailer truck drivers in Texas earn an average $21.28 per hour or $44,260 per year, according to the Bureau of Labor Statistics.[39] Some drivers work locally, making deliveries to businesses or residences. Others work "over the road," carrying merchandise and hazardous materials long distances and over state lines.

FUNDING

Community colleges offering short-term career-focused programs often struggle with the bottom line. Career and technical education can be expensive—sometimes more expensive than traditional academic programs. But short-term programs—credit-bearing and noncredit—are at a disadvantage financially. And shorter noncredit offerings often face a double whammy.

Community colleges offering short-term career-focused programs struggle with the bottom line.

Costly programs

Costs start with equipment and supplies. Every educator interviewed for this study had an example, some of them startling. Ranken Technical College president Stan Shoun estimates that the equipment on his small campus—a school with fewer than 3,000 students, most of them enrolled in semester-length programs—is worth $150 million, and he must replace a good deal of it every few years to keep up with changing technology.[40] Texas State Technical College teaches truck driving on its own late-model 18-wheelers—several big tractor-trailers at each location where the course is offered.[41]

Lord Fairfax Community College trains heavy equipment operators on simulators rather than bulldozers or earthmovers; the college can't afford to purchase these big, heavy-duty vehicles, which start at around $4 million. But simulators aren't cheap either—roughly $250,000 apiece.[42] In other programs, the major cost is supplies—electrical conduit and fittings, for example.[43]

A second big expense is instructors. Career and technical classes are often smaller than traditional course offerings. Psychology 101 can be offered in a large lecture format, but welding and nursing come across best in a setting where every student receives individual attention and hands-on help from an instructor. Adding to the cost, most of the colleges we visited prefer to hire technical instructors with experience in the industry for which they will be training students, and colleges struggle to match new hires' previous private-sector salaries.

Not all colleges pass these expenses onto students. Most community college administrators are mindful of their typical students' limited means. It helps that programs are short—that can contain costs—and that students often need only one course, rather than two or four years of schooling, to land a high-demand, high-paying job. Still, it can be difficult for colleges to keep prices affordable.

Some of the programs we visited charge as little as $700. Others ask more than $9,000. But even the cheapest programs can be out of reach for low-income students and working adults struggling to make ends meet on low-wage or part-time work.

The JOBS Act would offer students enrolled in short-term programs up to half the current discretionary Pell award, or approximately $3,500, enough to cover tuition costs for five of the eight programs we visited.[44]

Institutions under pressure

Community college administrators face a multitude of financial pressures—state and local economic trends squeezing their budgets. Short-term career-focused programs—credit and noncredit—often find themselves in a particularly difficult position.

Every state is different in how it funds its community and technical colleges. But many if not most institutions rely on a three-part mix: state funding, local property taxes and tuition. When either state or local inputs decline, colleges are forced to count more heavily on tuition to cover costs—in many cases, they have no choice but to raise tuition.

The problem starts at the state level. Funding for all public colleges and universities has declined sharply in recent years—subsidies sank with tax revenues during the Great Recession, and investment in public education failed to recover even when revenues rose. In Texas, for example, in 2000, the state paid community colleges more than $3.50 per contact hour. Today, the rate is closer to $1.50, adjusted for inflation.[45]

In other places, it's property tax funding that's shrinking, often dramatically, as factories close and once flourishing regions lose population and income. At Indian Hill Community College in rural south central Iowa, for example, local property taxes once accounted for a solid third of the budget. Today, they cover just 5.3 percent.[46]

When either state or local funding declines, colleges rely more heavily on tuition to cover costs.

As important as funding levels is how state money is allocated and what incentives this creates for college administrators. Many states rely on traditional full-time-equivalent funding—money for the hours students spend sitting in class. Others use funding formulas geared to population or poverty rates or the popularity of course offerings. In the last two or three decades, many states have set aside a portion of the dollars they appropriate for higher education and tied it to performance metrics—most often, enrollment, completion and graduation rates.[47]

But however state college funding priorities are set, career-focused programs—credit-bearing and noncredit—are often at a disadvantage. Only a few states make allowance for the extra expenses associated with technical training.[48] And only a handful of performance-based funding formulas put a premium on employment outcomes—attainment of industry credentials, job placements or increased earnings.[49]

Institutional funding for short-term programs varies from state to state. But many community colleges receive per-student subsidies for students enrolled in short credit-bearing programs. In Texas, for example, the community college funding formula is based on contact hours, and reimbursements are calculated the same way whether the program is semester-length or shorter.

Much less funding is available for noncredit career education.

In this realm as in others, it's hard to find information about noncredit programs; the most authoritative 50-state scan is more than a decade old. But there's no sign that things have changed since 2008, when a team of researchers at the Columbia University Community College Research Center found that only about half the states allocate any money for noncredit education, often at levels far below funding for traditional academic courses.[50]

The upshot for noncredit community college administrators: by and large, they are left to fend for themselves, scrambling to find funding and cobble it together to cover costs.

Some noncredit divisions make money from customized contract training. Others work hard to secure state and federal grants. The Obama-era Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant program was a shot in the arm for many institutions providing short, credit and noncredit job-focused training developed in partnership with employers.

But in the end, all the colleges we visited rely heavily on tuition—it covers at least 30 percent of the overall budget at every institution we toured and sometimes as much as 100 percent of the cost of the short career-focused programs we examined.

How students cover costs

With institutional funding flagging and colleges strapped to cover costs, the burden often falls on students.

For many community college students—those enrolled in credit- and non-credit-bearing programs—it's a heavy load. One in three community college students are the first in their families to attend college. Fewer than half are white. Fifteen percent are single parents. The overwhelming majority—between 62 percent and 72 percent depending on whether they attend full-time or part-time—work to support themselves while they're in school.[51]

The eight colleges examined for this paper vary widely in the degree to which students rely on federal aid—from Ranken Technical College, where 66 percent of students receive Pell funding, to Northern Virginia Community College, where only 19 percent leverage Pell dollars.[52] Nationwide, 59 percent of community college students rely on state or federal financial aid to cover costs, and 34 percent receive Pell Grants.[53] Yet even students who receive Pell funding often struggle to pay their bills.

The challenge is even greater for those enrolled in short-term programs, credit-bearing and noncredit. Both are ineligible for Pell Grants. Some states offer tuition assistance to students in shorter credit-bearing programs, but it's rarely enough to cover costs. And on this count too, students enrolled in noncredit career courses are often doubly disadvantaged—many fewer states provide tuition assistance for noncredit programs.

Much less funding is available for noncredit career education.

Asked where students in short-term programs find the money for tuition, many of the educators we met threw up their hands—most learners have few options, none of them good.

Administrators at the programs we visited pointed to four potential buckets of funding: miscellaneous federal workforce grants and training subsidies; students willing to self-pay in the hope that a short career-focused course will help them land a job or a better job; a handful of state programs designed specifically to cover the cost of shorter noncredit offerings; and private-sector funding from employers and employer associations.

Federal benefits. A wide array of federal programs—by one account, 43 different overlapping spending streams—provide funding for job training, and some students at all the colleges we visited make use of these dollars.[54] But according to most of the administrators we spoke with, federal funding covers only a small share of student costs.

The most robust federal funding for workforce education is the Workforce Innovation and Opportunity Act. This 2014 legislation is a large, complex bill authorizing or reauthorizing over a dozen different programs for a total cost of some $8.7 billion in FY2018, close to two-thirds of all federal workforce dollars.[55]

Much of that total is set aside for dedicated programs like Job Corps and Wagner-Peyser Act employment services, neither of which generally pay for education or training at a community college.[56] Just $1.8 billion of the total appropriation is allocated for what the law calls "training and career services" for adults and dislocated workers.[57] But only a relatively small percentage of this amount is in fact spent on training. Most of the money supports career services—job searches, referrals, counseling and

WIOA funding plays a surprisingly small role on most of the campuses we visited.

"workforce preparation activities" such as how to write a resume or sit for a job interview.

Several states have passed legislation mandating that an increased share of WIOA dollars be used for training. But historically only 10 to 12 percent of WIOA adult and dislocated worker recipients have been enrolled in training services.[58]

Still another challenge: many students who enroll in short-term career-focused programs are already working to support themselves. And although they often hold part-time or low-paying jobs, many earn too much to qualify for WIOA training subsidies, which either prioritize low-income recipients and those living in households that receive means-tested federal benefits or require that workers have recently been laid off from a job.[59]

WIOA funding plays a surprisingly small role on most of the campuses we visited. No college could offer a precise percentage. Administrators at Texas State Technical College and Indian Hills Community College estimated that one third of the students in the program we visited might tap into WIOA funding. At all the other campuses we toured, the figure was less than 5 percent.

Several of the administrators we interviewed expressed interest in working more closely with their local workforce investment boards (WIBs). But many said cooperation is difficult: it can be hard to communicate with WIB administrators, many WIBs are mired in bureaucracy, and many don't move fast or flexibly enough to keep up with a college.[60]

Even when the local board is willing and able, budgets are limited, with training dollars in particularly short supply. WIOA spending can also be erratic—states regularly revise the occupations that can be covered by training dollars, local workforce boards have discretion over which students can make use of funding—and many educators hesitate to rely on it.

A second significant source of federal job training dollars is the Post 9/11 GI Bill, which provides some 10 percent of total federal spending on workforce education.[61] Compared to other federal workforce dollars, GI Bill funding comes with relatively few restrictions, and it covers a wide array of job training programs.

In 2016, the Veterans Administration spent some $11 billion on education, training and education-related services, including housing, for veterans and their families. Some 25 percent of recipients used their benefits to pay for instruction and other costs at a community college—for credit-bearing, noncredit, academic and occupational programs.[62] But this money too goes only so far—veterans make up only 5 percent of community college students.[63]

A third major source of federal funding for job training programs is the Temporary Aid for Needy Families (TANF) program, which accounts for some 15 percent of federal workforce spending. But TANF training dollars come with severe restrictions on who is eligible and how much they can spend—the lifetime cap is 12 months of education and training. Only one of the colleges we visited, St. Louis Community College (SLCC), identified TANF as a source of funding for students in short job-focused programs.

SLCC administrators also talked about two other, smaller federal programs that fund job training for recipients of means-tested federal benefits: US Department of Health and Human Services (HHS) Health Profession Opportunity Grants (HPOG) and SkillUP subsidies provided by the US Department of Agriculture for Supplemental Nutrition Assistance Program (SNAP) beneficiaries.

GI Bill funding goes only so far—veterans make up only 5 percent of community college students.

Some students use their own money to pay for short-term job-focused programs.

But neither program is big enough to do more than supplement other kinds of financial aid. Total HPOG funding for 2018: $85 million.[64] Formula funding for SNAP education and training: $90 million.[65] And smaller programs can be unpredictable.

Between 2015 and 2018, SLCC used TAACCCT funding to significantly expand its short noncredit job-focused programs. When the last TAACCCT grant ended, administrators scrambled to find other ways to cover costs, relying heavily on HPOG funding to pay for the program we visited—a nine-week noncredit course training patient care technicians (PCTs).

But now HPOG subsidies are being phased out—the last round of five-year grants, awarded in 2015, is coming to an end—and St. Louis administrators are not sure where to turn. The lesson they say they learned from the HPOG experience: supplementary, occasional funding sources can be precarious—not something they want to rely on to sustain programs.[66]

Bottom line: it was difficult to determine how many students on the campuses we visited rely on federal funding for workforce education. There are clearly many streams to draw on, and some administrators work hard to help students find available funding. But in no case—no program we visited—did federal job training dollars alone appear to be a sustainable source of support for students enrolled in short job-focused programs.

So too with student loans. The US Department of Education has different rules for student loans than for Pell Grants, and students in shorter programs with high completion and job placement rates are eligible for loans. But none of the college administrators we spoke with said their students were relying on federal education lending.

Some students do appear to borrow on private equity markets. Sallie Mae offers a variety of loans for career training, including for noncredit college programs, and several college administrators mentioned Sallie Mae among the funding sources students rely on to cover the cost of short-term, noncredit offerings.[67]

What isn't known: what share of students borrow to cover workforce education or how big their loans are. Few administrators we spoke to seemed to think borrowing plays a major role.

Self-pay. When no other funding is available, some students use their own money to pay for short-term job-focused programs. Many of those who enroll in shorter programs are working, albeit often in part-time or low-paying jobs, and some feel the investment is worth it—a stepping stone to better wages.

No administrator on the campuses we visited could say how many students in short-term programs pay out of pocket. No school appeared to track the number. College officials say the share varies from program to program but, particularly for less expensive offerings, it can be more than a trivial percentage.

State funding for shorter noncredit programs. Many states provide tuition assistance for community college students—often a patchwork of relatively small programs that learners mix and match, often with federal dollars, to cover the cost of instruction.

In some states, this money can be used for short-term offerings: administrators at both the credit-bearing programs we visited reported students using state tuition assistance. What wasn't clear: how far this funding goes—what share of students' college costs it covers.

Many fewer states—by most accounts, no more than a handful—provide funding for noncredit job-focused programs, no matter how long or short. Two of the four states we visited, Iowa and Virginia, are among those that do—two relatively new, innovative programs.

Iowa's GAP Tuition Assistance Program was launched in 2013 expressly to help cover the costs of short-term noncredit programs.[68]

Students must demonstrate financial need. Only noncredit programs are eligible, although they must be aligned with credit-bearing offerings—students who later want to continue their educations, earning a credit-bearing certificate or degree, should be able to build on what they learned on a GAP scholarship. Programs must lead to a recognized credential: a noncredit certificate, state licensure or industry certification. Most important, programs must prepare students for in-demand jobs.

Administrators sometimes choose not to offer an expensive program even though companies in the region have a pressing need for workers with those skills.

The Iowa state legislature has designated four eligible in-demand industries: advanced manufacturing, health care, IT and transportation and logistics. But it's possible for college administrators to add to the list by proving there is a need in their area—demand that must be corroborated by employers.

Colleges decide which programs to offer—which programs on the in-demand list are needed in their region. Each school receives an annual GAP allocation and disburses it on a first-come, first-served basis until the money runs out.

The challenge, according to administrators at Indian Hills Community College: they often deplete their allocation well before the year is over—which means they sometimes choose not to offer an expensive career-focused program even though companies in the region have a pressing need for workers with those skills.

In FY2017, 95 Indian Hills Community College students received GAP assistance—an average $1,850 each to pay for tuition, books, testing and other fees.[69] College administrators only wish the money went further—some 800 to 1,000 Indian Hills students enroll each year in short-term, career-focused noncredit courses.[70]

The state of Virginia launched its noncredit funding initiative, the New Economy Workforce Credential Grant Program, or FastForward, in 2016.

In Virginia, as in Iowa, policymakers faced a challenge: they were eager to expand access to noncredit career offerings aligned with changing economic needs, but also worried about quality assurance—how to ensure that students were completing courses and programs led to high-demand, high-paying jobs.

Part of the answer in Virginia, as in Iowa, is a state list of priority industries and in-demand occupations and credentials. A task force appointed by the state workforce development board developed the list and reviews it annually on the basis of state labor market information.[71] Each community college in the state then customizes the list with input from regional employers, and regions may petition to add occupations if there is demand from local businesses.[72]

But Virginia policymakers didn't stop there. A second innovation, the hallmark of the FastForward initiative: tuition assistance is performance-based. Students receive a state subsidy only if they complete programs successfully—and if they fail, both they and the college they attend are on the hook to cover the sunk costs.

How it works: only noncredit programs are eligible. Courses must be aligned with in-demand jobs and prepare students to sit for industry-recognized certification tests. There's no requirement that courses be short, but college administrators report that many if not most are less than a semester in length—students and employers focused on in-demand skills want training as streamlined and efficient as possible.[73]

Students are responsible for the first third of a program's cost when they enroll, and they can use other aid if available to help cover the cost. If they complete the course, the state pays a second third. If, on the other hand, the student fails to complete the program, they are responsible for the second payment—and the state will garnish their wages if necessary to recoup funding.[74]

The last step—the key to a third payment—is passage of an industry-recognized certification test. If a student takes and passes the test, and verifies this with the college, the state comes through with a final third of the cost of the program. If not, the college is on the hook.

Bottom line: all concerned parties—student, college and the state—have a stake in the outcomes of career education. The state will cover up to two-thirds of the cost of a short noncredit career-focused program—but only if the student completes the course and earns an industry-recognized credential. The maximum possible state payment: $3,000 toward a $4,500 course.

This shared responsibility gives all three parties an incentive to oversee the quality of short-term programs. It also reduces the likelihood that increased public spending will drive up the cost of education and training.

The FastForward program has been recognized nationwide as groundbreaking policy.[75] It's changing behavior in Virginia: three times as many students earned certifications in 2016-2017 as had earned them the year before.[76]

But in Virginia as in Iowa, funding falls short of demand. A few months before the end of FastForward's first year, the state ran out of money, and the initiative was suspended for several months. Now it's up and running again, but educators are wary.

At Lord Fairfax Community College, where roughly one-quarter of students are enrolled in short-term noncredit career-focused programs, only 17 of 600 offerings are eligible for FastForward funding.[77]

Employers. Among the most significant sources of funding for several of the programs we visited were private sector employers—either individual companies or industry groups.

There are several different ways for employers to cover tuition costs. Some pay the college directly. In other cases, the program is part of a formal or informal apprenticeship, and students use wages they earn on the job to help pay for tuition. In still other cases, students draw on a company's tuition reimbursement policy.

This shared responsibility reduces the likelihood that increased public spending will drive up the cost of education and training.

Most of the colleges we visited were hesitant to tell us what exactly employers contribute or how the arrangement works. But several reported that an employer or employers pay a significant part of the cost of the short program we examined.

At Indian Hills Community College in Iowa, local long-term care facilities cover the lion's share of tuition for students enrolled in a three-week certified nursing assistant (CNA) program—even though many trainees are not yet working for a health care facility.

Students enrolled in Ranken Technical College's short-term plumbing program get help from the plumbing contractors who sponsor them as apprentices.

Similarly, at NOVA, Amazon Web Services and the Seattle-based nonprofit Apprenti cover the cost of tuition and wages during the 11 weeks that data tech center apprentices spend in a college classroom.

San Jacinto College in Pasadena, Texas, has an arrangement with a group of local construction

Among the most significant sources of funding were private-sector employers.

employers—a nonprofit offshoot of the Greater Houston chapter of a national trade association, the Associated Builders and Contractors.[78]

Industrial construction relies on highly skilled craftsmen. When shortages first became apparent 20 years ago, several large Houston-area contractors came together with their clients—refineries, petrochemical facilities, brand-name oil and gas companies—to create a training fund, the Construction & Maintenance Education Foundation (CMEF).

Members tithe themselves to collect what the construction industry calls "cents per hour" funding, and the foundation partners with three local colleges to provide skills craft training leading to industry-recognized certifications.

In spring 2019, the San Jacinto training center we visited—one of three locations where CMEF courses are available—is offering 11 short-term programs paid for by the foundation.[79] Training is available to workers employed by CMEF member companies and others new to the industry. The foundation covers 100 percent of the cost—students pay nothing.

Several of the administrators we interviewed at colleges that rely on employer funding speculated about the potential impact of a change in federal policy. Their concern: would employers continue to cover tuition costs if federal education dollars were available?

"We don't want new public funding to drive out private funding," said one workforce dean.[80] "It's taken us a long time to get where we are," another explained, "to get employers to step up. We don't want to discourage them—to tell them we don't need them or let them off the hook."[81]

Other college officials offered a different view. "Employers don't think the current system is fair," one instructor reported. "Taxpayers pay for everything else—credit-bearing programs, academic education, Anthropology 101. Shouldn't they pay something toward effective workforce education?"[82]

Ultimately, many educators were hopeful that policy would encourage a combination of public and private funding.

"Employers like incentives," explained one administrator. "If you ask them to pay 100 percent, they balk. But many are willing to contribute if the government also puts some money on the table, making what's required of employers more predictable and affordable."

The metaphor we heard on several campuses: all relevant parties should have skin in the game—employers, students and government in its role as the provider of a public good, job training.[83]

'Government funding shapes what we offer, and it's distorting the market.'

If additional funding were available

When asked if short-term programs were meeting local labor market needs, the educators we spoke with all gave a version of the same answer: "Yes, but." Their programs address demand but far from satisfy it, and if additional federal funding were available, more could be done to train workers for local jobs.

If anything, educators told us, demand is growing for short courses geared to rapidly changing technology and fluid labor markets with high employee turnover rates. Students and employers are in a hurry, and both appreciate narrowly tailored, career-focused programs that get students back to the workplace as quickly as possible.

Yet as is, several administrators told us, colleges feel caught between two conflicting imperatives—the demands of the job market and the incentives created by state and federal education policy.

"Government funding shapes our programs," one college president explained. "To a large extent, it determines what we offer, and it's distorting the market. Because of federal financial aid, we stretch courses that shouldn't be stretched to semester length and shoehorn them into degree programs."[84]

What would colleges offer if incentives were different?

Some administrators focused on immediate needs—local skills mismatches and in-demand jobs. In St. Louis, where vast tracts of abandoned houses are waiting to be torn down to prepare for new construction, there's a pressing need for environmental remediation technicians—workers trained to handle lead abatement and asbestos removal.[85]

In Northern Virginia, the priority is IT workers. The NOVA AWS apprenticeship program trains some 70 IT technicians a year. But according to NOVA administrators, local demand is many times that—perhaps 10,000 workers annually.[86]

First on the list in Texas, according to Texas State Technical College: commercial truck drivers.[87]

Other educators took a more generic approach. If more money were available for shorter programs, Ranken Technical College would break existing courses up into shorter modules and offer them in a different sequence—more closely geared to the skills in demand in the job market. Ranken would also offer students a choice between standalone technical programs and offerings packaged with general education courses.[88]

Similarly, in rural Iowa, educators would break existing programs up into smaller, more focused units—a specific type of welding currently in demand in the region, or just the skills needed to man a programmable logic controller (PLC) system, rather than a full-scale robotics course.[89]

> 'What we need are programs designed to get students to that first job faster.'

Still other colleges would emphasize soft skills. "Most employers are willing to do some training," one educator explained, "but only if workers come to the company with the basics under their belt—a foundation to build on."[90] Among the most needed offerings, according to educators: communications and time management.[91]

What all these offerings have in common: they're what one educator called "gateway programs." "What we need are programs designed to get students to that first job faster—that's often the best thing for them and for employers."[92]

OUTCOMES AND ACCOUNTABILITY

Program results

The goals of short-term career-focused programs vary widely. In some cases, students earn credit-bearing certificates. Other courses culminate in noncredit awards—a certification of completion or continuing education units. In still other cases, students who complete the program sit for an end-of-course external exam administered by a third party—tests that lead to licensure or industry-recognized certifications.

Yet another metric, more important to many students than a credential: post-graduation employment outcomes, including job placements and wages.

This varied patchwork of outcomes can make it hard to compare courses or generalize about results. Going directly to the college doesn't always help. The eight campuses we visited could all produce some information about program outcomes, but data retrieved on location from educators were often limited or difficult to parse—for several reasons.

Many short-term career-focused programs are relatively new. Many are small—perhaps a dozen students each time the course is offered and less than a few dozen over a year—and produce relatively little data. It was also difficult to verify what college administrators told us about outcomes.

Still, despite these limitations, several of the programs we visited were able to offer some information about student outcomes.[93]

By and large, these self-reported results were impressive.

Four colleges tracked completions for the short career-focused program we visited, and in every case, more than 80 percent of students completed the course.

Two programs tracked the percentage of students who earned third-party credentials—state licensure or industry certifications—and both reported attainment rates of more than 90 percent.

One program tracked employment one and two years after completion and found that more than 90 percent of completers were employed.

College administrators offer several reasons for these striking outcomes. Career-oriented students are focused. It helps that programs are short—there's little time for students to veer off track. Many learners are older than traditional college students, and they've returned to school with clearly defined goals—to acquire a skill or earn an industry credential that will lead to a better job or better pay.

Students enrolled in employer-funded programs who are promised a job or a job interview have an even stronger incentive to finish. Those already employed—apprentices and others—may be more motivated still. Completing the course is part of their job, and their employer is watching over their shoulder.

Many learners are older than traditional college students, and they've returned to school with clearly defined goals.

Accountability

How are colleges held accountable for the outcomes of short-term career-focused programs? Are institutions rewarded for good results or punished for poor outcomes?

In this realm too, the picture is mixed. Several of the educators we interviewed differentiated between formal and informal accountability, and in the absence of external oversight, many said they relied on internal college processes, often looking to local employers for validation.

The college. Credit and noncredit divisions alike, in most states, community colleges face little formal accountability—few direct consequences for success or failure.

Like four-year institutions, most community college credit-bearing programs are overseen by accreditation agencies. But much of what accreditors consider are inputs—faculty qualifications, facilities, fiscal sustainability, leadership—not student outcomes.

"The metric they care about is not what percent of students are failing English 101," one college administrator explained. "It's do you have an internal process to correct course if most students are failing English 101?"[94]

Noncredit programs are not generally overseen by accreditors.

In addition to accreditation, two-year colleges report extensive information to government agencies. They submit data on enrollments, completions, graduation and debt-to-earnings ratios to a broad array of state administrators, federal agencies and the independent, nonprofit National Student Clearinghouse.

In the absence of external performance metrics, many colleges fall back on internal college processes.

But individual colleges—particularly nonprofit colleges—rarely face consequences, financial or other, for what's contained in these reports.

Among state governments' most significant levers is program approval. But none of the states we visited appear to use it to reward or punish individual institutions.

In Texas, an advisory board of community college administrators, the Workforce Education Course Manual (WECM) advisory committee, reviews completion data from career-focused programs across the state and pegs hourly reimbursement rates to the number of students completing the course statewide. This signals to colleges to stop offering unpopular courses or those for which there is no market demand. But it does little to hold particular institutions responsible for good or bad student outcomes.[95] If anything, colleges are punished and rewarded for other institutions' completion rates.

So too in Missouri. College administrators say the state legislature keeps a sharp eye on the community college system, particularly its employment outcomes, and is prepared to cut or augment the state's higher education budget accordingly.

Bottom line for a small school like Indian Hills Community College: it may suffer or benefit as a consequence of other colleges' performance. But nothing an individual institution does affects its share of the state's overall community college budget—that's determined by a formula that takes no account of student outcomes.[96]

Most of the college administrators we interviewed were concerned about quality and accountability. Most appeared to welcome the possibility of additional, more effective metrics and new forms of oversight. What most fall back on in the absence of good external metrics: internal processes.

Many ask for student evaluations. Others survey employers. Every campus has processes for self-assessment and review. It was hard for us to tell if these internal reviews provide effective oversight. But most of the career education administrators we met—particularly the noncredit administrators—seemed attuned to demand from students and employers.

Noncredit continuing education. Noncredit college administrators operate under different rules than their colleagues on the credit side. In some ways, according to educators we interviewed, the accountability they face is more lax. In other ways, it's more stringent.

Formal reporting requirements are often looser. In many states, noncredit divisions report little or nothing to the state, and the state often has little leverage to encourage or discourage what the division does. "We get no money from the state for noncredit programs," one administrator explained, "so there's no state accountability."[97]

A few noncredit administrators we interviewed said they face scrutiny from other funders. Several have to answer to a local WIB for the funding they receive for training services: workforce boards review outcomes data and sometimes cut back on referrals or demand refunds.[98] And most federal grants come with reporting requirements that may or may not influence whether additional funding is available in the future.[99]

Still more significant in eyes of many community college educators, albeit an informal metric, is what one administrator called "market accountability." Do graduates get jobs? Are employer partners satisfied with the graduates they hire? Do graduates have the skills they need to succeed in the workplace?

When asked how they measured their own performance, noncredit administrators on virtually every campus we visited used the same phrase: "repeat business"—satisfied employers who partner with the college year after year, providing revenue directly or indirectly, through students drawn to programs that collaborate with employers.

"By and large, we're self-funding," one continuing education administrator told us. "So we're very market-driven."

"Unlike the credit side of the college," he explained, "which receives a state subsidy for enrollments, we depend on employer demand and student foot traffic. This creates a sense of urgency that may be lacking on the credit side."[100]

Other administrators take the logic a step further. "It's a philosophical difference," one said.

'By and large, we're self-funding. So we're very market-driven.'

"Our number-one customer is employers. We work hard to keep our employer partners happy. This is good for students—without employers, it's unlikely that what students are learning will be useful in the job market. But it's an unforgiving metric—customers either come back or they don't."[101]

Industry-recognized credentials. Several states are endeavoring to capture this market accountability with a formal performance metric—a quantifiable indicator that can be used to reward and challenge colleges. The metric of choice: student attainment of industry-recognized credentials.

Industry certifications hold out considerable promise as performance metrics. Developed by employer groups, grounded in sector-wide consensus building, they aim to reflect job skills in demand across the industry—a proxy for employability.

The challenge: industry credentials are uneven in quality. The American National Standards Institute estimates that more than 4,000 certifying bodies issue occupational certifications.[102] But according to the analytics firm Burning Glass Technologies, only a few hundred credentials are in demand among employers.[103]

Many states are attempting to sort the wheat from the chaff. Virginia and Iowa have among the most sophisticated systems for identifying in-demand credentials—methods developed to screen certifications for the state's noncredit tuition assistance programs, Gap or FastForward.[104] But more than 30 states have or are creating lists of approved certifications—lists they use to determine aid to education and training programs offered by high schools, colleges or the public workforce system.[105]

Virginia is among the states moving most aggressively to adopt industry certifications as a performance metric. Historically, the statewide goal for the community college system was the number of students and employers served. The new six-year plan, announced in 2018, makes credential attainment the number-one goal—degrees, certificates and industry certifications.[106] The statewide target: to triple the number of credentials issued by 2021. FastForward funding for attainment of industry certifications is a critical part to the plan.

For a Virginia community college noncredit division offering FastForward-eligible courses, the consequences of success and failure are quick and certain. Colleges invest in programs up front. They hire teachers, purchase books, assign classroom space, dedicate equipment and other resources—a long list of nonrefundable direct costs. But under FastForward, students pay only one-third of tuition when they enroll in a course, and colleges do not recoup their full investment until students take and pass an industry certification test.

‘If we’re using taxpayer dollars, colleges need to get results.’

Some Virginia community college administrators are ambivalent about FastForward—worried about meeting the initiative’s stringent performance metrics.

Other educators welcome the accountability. The new program gives them a way to quantify and demonstrate the market discipline they live by—a metric they believe to be an apt and accurate measure of their performance.

“Not every noncredit program is career-focused,” one administrator explained. “Many don’t lead to a job or a better job. And if not, it may not make sense to use public funding to pay for them.”

“Employment is different,” he added. “We ought to pay for employment outcomes. And if we’re using taxpayer dollars, colleges need to get results—students need to get high-paying, in-demand employment.”[107]

CONCLUSION

How many community colleges nationwide offer short career-focused programs? How effective are these offerings in preparing learners for the workforce? How do students currently cover the cost? Eight colleges are a small sample, and many important questions remain—we need additional research.

What can be determined from eight site visits: short career-focused programs are in strong demand among students and employers. College administrators are convinced that the need will only grow as technological change accelerates, transforming many existing jobs and creating new ones. Labor markets in the regions we visited were highly varied: urban, rural, suburban, spread across four diverse states. But the educators we interviewed left little doubt about the demand for short, streamlined job training programs developed in cooperation with employers—growing demand educators feel ill-equipped to meet with existing state and federal funding.

Also clear at all the colleges we visited: short-term career-focused programs struggle to make ends meet. Institutions are under financial pressure. Students stretch to cover the cost of tuition. Short-term job training is relatively inexpensive in comparison with a traditional college degree, two-year or four-year, and federal and state workforce dollars sometimes help defray the cost. But at no college we visited did federal workforce funding alone appear to be a sustainable source of support for students enrolled in short job-focused programs.

The challenge for policymakers: how to craft federal financial aid for short-term programs that measures effectiveness and rewards quality. The educators we interviewed had suggestions. They want to be held accountable with performance metrics appropriate to their mission—job training, not academic education. Program outcomes—student employment outcomes—are a better yardstick than inputs. Among those best positioned to judge career-focused programs are employers who hire graduates. Industry-recognized credentials can be an effective proxy—for employer demand and employability.

As is, many of the programs we visited are held to account by market discipline. What matters to employers and students paying out of pocket are outcomes—job outcomes. And programs that don't meet the needs of students and employers do not survive.

Public funding for short-term programs should come with the same kind of discipline—rigorous expectations and pressure for strong student outcomes. At job-focused programs and others, colleges should be held accountable for results.

ENDNOTES

1. College Board, *Total Pell Grant Expenditures and Number of Recipients over Time*, 2017-18, https://trends.collegeboard.org/student-aid/figures-tables/pell-grants-total-expenditures-maximum-and-average-grant-and-number-recipients-over-time.
2. "Higher Education Act of 1965," 2013, P.L. 89-329, 89th Cong. (2019), https://legcounsel.house.gov/Comps/HEA65_CMD.pdf.
3. "To extend Federal Pell Grant eligibility of certain short-term programs," S.839, 116th Cong. (2019), https://www.congress.gov/bill/116th-congress/senate-bill/839/text.
4. Author's interview with Lord Fairfax Community College vice president of workforce solutions and continuing education Jeanian Clark, Middletown, VA, January 29, 2019.
5. The term "hidden college" was coined by researchers Richard Voorhees and John Milam in 2005. See https://www.voorheesgroup.org/voorhees-group-pubs/Hidden%20College.pdf. For a useful recent study, see http://www.aei.org/publication/addressing-the-employment-challenge-the-use-of-postsecondary-noncredit-training-in-skills-development/.
6. American Association of Community Colleges (AACC), Fast Facts 2019, March 2019. Retrieved from https://www.aacc.nche.edu/research-trends/fast-facts/.
7. American Association of Community Colleges, *Community College Enrollment Surge*, December 2009, https://files.eric.ed.gov/fulltext/ED511056.pdf.
8. Author's interview with Indian Hills Community College administrators, Jill Budde (executive dean of career and workforce education), Ashley Moyer (executive director of continuing education and workforce solutions), Daniel Terrian (associate dean of advanced technologies), and Martha Wick (associate dean of governmental affairs and grants), Ottumwa, IA, January 8, 2019.
9. Email to author from Northern Virginia Community College vice president of strategic partnerships and workforce innovation Steven Partridge.
10. Michelle Van Noy, James Jacobs, Suzanne Korey, et al, *The Landscape of Noncredit Workforce Education: State Policies and Community College Practices*, Community College Research Center, April 2009, https://ccrc.tc.columbia.edu/publications/noncredit-workforce-education-policy-practice.html; Mason M. Bishop, *Addressing the Employment Challenge*, American Enterprise Institute, 2019, https://www.aei.org/wp-content/uploads/2019/03/Addressing-the-Employment-Challenge.pdf.
11. Clark, interview.
12. Mason M. Bishop, *Addressing the Employment Challenge*, American Enterprise Institute, 2019, https://www.aei.org/wp-content/uploads/2019/03/Addressing-the-Employment-Challenge.pdf; Tamar Jacoby, "Community Colleges and Career Education, " *Education Next*, 2018, https://www.educationnext.org/community-colleges-career-education-new-non-degree-programs-skip-general-education-requirements/.
13. Kathy Booth and Peter Riley Bahr, *The Missing Piece: Quantifying Non-Completion Pathways to Success*, LearningWorks and West Ed, October 2013, www.learningworksca.org/wp-content/uploads/2012/02/missingpiece_web5081.pdf; and Kathy Booth, *The Ones That Got Away: Why Completing a College Degree Is Not the Only Way to Succeed*, LearningWorks and WestEd, September 2014, www.wested.org/wp-content/files_mf/1413404431theonesthtatgotaway.pdf. Also, author's interview with San Jacinto College director for continuing professional development J.D. Taliaferro, Pasadena, TX, November 12, 2018; author's phone interviews with Partridge, January 15, 2019 and January 17, 2019.
14. Taliaferro, interview.
15. Clark, interview.
16. Taliaferro, interview; Indian Hills Community College administrators, interview; Partridge, phone interviews, 2019; author's interview with Northern Virginia Community College workforce apprenticeship manager Trung-Khanh Le Ngo, Annandale, VA, January 15, 2019; author's interview with Ranken Technical College president Stan Shoun, St. Louis, MO, December 12, 2018; Clark, interview, 2019; author's interview with St. Louis Community College administrators, Kelly Deloch (COM manager of business, finance and technology support), Rene Dulle (project manager of environmental and transportation programs), Dianne Lee (project director of federally funded projects), Lucia Miller (coordinator of workforce data analysis and performance reporting) and Hart Nelson (associate vice chancellor for workforce solutions), St. Louis, MO, January 14, 2019.
17. Shoun, interview; Indian Hills Community College administrators, interview; Taliaferro, interview.
18. Clark, interview.
19. Tamar Jacoby, "The Certification Revolution," in *Education for Upward Mobility*, ed. Michael J. Petrilli (Lanham, MD: Rowman & Littlefield, 2015).
20. Partridge, phone interview.
21. It was outside the scope of this paper to interview employers who advise or partner with the programs we visited.
22. Author's interview with Texas State Technical College associate vice chancellor Rob Wolaver, Waco, TX, November 13, 2018.
23. Taliaferro, interview.
24. Author's interview with Dallas County Community College District administrators, Cynthia Butler (executive district director financial aid and scholarship programs), Rogers Oliveira (programmer analyst for systemic reporting and analytics) and Joyce Williams (associate vice chancellor of workforce and community initiatives), Dallas, TX, November 14, 2018.
25. Bureau of Labor Statistics, "Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates Dallas-Plan-Irving, TX Metropolitan Division," employment statistics, May 2017, https://www.bls.gov/oes/2017/may/oes_19124.htm.
26. Indian Hills Community College administrators, interview.
27. Glassdoor.com, "Certified Nursing Assistant (CNA)," Care Initiatives, https://www.glassdoor.com/Job/jobs.htm?suggestCount=0&suggestChosen=false&clickSource=searchBtn&typedKeyword=certified+nursing+assistant&sc.keyword=certified+nursing+assistant&locT=C&locId=1149454&jobType=; Indeed.com, "Certified Nursing Assistant (CNA)," SunnyBrook Living Care, https://www.indeed.com/q-Nursing-Assistant-l-Ottumwa,-IA-jobs.html; Iowa Workforce Development, "Occupational Employment Statistics," https://www.indeed.com/q-Nursing-Assistant-l-Ottumwa,-IA-jobs.html
28. Clark, interview.
29. Bureau of Labor Statistics, "State Occupational Employment and Wage Estimates Virginia," occupational employment statistics, May 2017, https://www.bls.gov/oes/2017/may/oes_va.htm.
30. Phone interview, Partridge and interview, Le Ngo.
31. Glassdoor.com, "Amazon Data Center Technician Hourly Pay," https://www.glassdoor.com/Hourly-Pay/Amazon-Data-Center-Technician-Hourly-Pay-E6036_D_KO7,29.htm.

32. Shoun, interview.

33. Payscale.com, “Average Plumber Hourly Pay in St. Louis, Missouri,” https://www.payscale.com/research/US/Job=Plumber/Hourly_Rate/01d74755/St.-Louis-MO.

34. St. Louis Community College administrators, interview.

35. Glassdoor.com, “Patient Care Technician Salaries in St. Louis, MO Area,” https://www.glassdoor.com/Salaries/st-louis-patient-care-technician-salary-SRCH_IL.0,8_IM823_KO9,32.htm.

36. Taliaferro, interview.

37. Bureau of Labor Statistics, “Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates Houston-The Woodlands-Sugar Land, TX,” employment statistics, May 2017, https://www.bls.gov/oes/2017/may/oes_26420.htm.

38. Author’s interview with Texas State Technical College administrators, Michael Bowers (senior vice president of student learning), Marlene McMichael (associate vice chancellor for government affairs) and Rob Wolaver (associate vice chancellor), Waco, TX, November 13, 2018; Taliaferro, interview; St. Louis Community College administrators, interview.

39. Bureau of Labor Statistics, “State Occupational Employment and Wage Estimates Texas,” occupational employment statistics, May 2017, https://www.bls.gov/oes/2017/may/oes_tx.htm.

40. Shoun, interview.

41. Wolaver and Bowers, interview.

42. Clark, interview.

43. Taliaferro, interview.

44. Estimate provided by office of Sen. Tim Kaine; https://www.congress.gov/bill/115th-congress/senate-bill/206/text; https://studentaid.ed.gov/sa/types/grants-scholarships/pell#how-much-money.

45. Neil Vickers & Shayne West, *The Budgeting Process for Public Community Colleges in Texas*, slides presentation at Texas Higher Education Coordinating Board Leadership Conference, Austin, TX, November 29, 2018. Retrieved from http://www.thecb.state.tx.us/reports/PDF/11740.PDF?CFID=100761638&CFTOKEN=96693380.

46. Indian Hills Community College administrators, interview.

47. Martha Snyder & Scott Boelscher, *Driving Better Outcomes: Fiscal Year 2018 State Status & Typology Update*, HCM Strategists, 2018, http://hcmstrategists.com/wp-content/uploads/2018/03/HCM_DBO_Document_v3.pdf; Jeffrey J. Selingo and Martin Van Der Werf, *Linking Appropriations for the Texas State Technical College System to Student Employment Outcomes*, Lumina Foundation, March 2016, https://www.luminafoundation,org/files/resources/linking-appropriations-to-outcomes-tx-1.pdf; Nicholas Hillman, *Why Performance-Based College Funding Doesn’t Work*, Century Foundation, May 25, 2016, https://tcf.org/content/report/why-performance-based-college-funding-doesnt-work/.

48. Tamar Jacoby, *Rethinking the Mission: Community Colleges and Workforce Education*, American Enterprise Institute, November 2017, https://www.aei.org/publication/rethinking-the-mission-community-colleges-and-workforce-education/.

49. Ibid.

50. Van Noy, Jacobs, Korey, et al., *The Landscape of Noncredit Workforce Education*.

51. AACC, *Fast Facts*.

52. Office of Institutional Effectiveness and Student Success, Fact Book, Northern Virginia Community College, 2017-2018. Retrieved from https://www.nvcc.edu/oir/_files/factbooks2013-2018.pdf; Partridge, phone interview; Shoun, interview.

53. AACC, *Fast Facts*.

54. United States Government Accountability Office, *Employment and Training Progras: Department of Labor Should Assess Efforts to Coordinate Services Across Programs* (GAO-19-200), 2019, https://www.gao.gov/assets/700/698080.pdf.

55. US Department of Labor, FY 2019 *Department of Labor Budget in Brief*, 2018, https://www.doleta.gov/budget/docs/FY2019BIB_ETAexcerpts.pdf; Report to the Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, U.S. Senate. United States Government Accountability Office, *Employment and Training Programs*, 2019, https://www.gao.gov/assets/700/698080.pdf.

56. A pilot project running at a handful of Job Corps Centers—including the one at Indian Hills Community College—can sponsor students in credit-bearing and noncredit community college programs. But these are exceptions that prove the rule.

57. Report to the Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, U.S. Senate. United States Government Accountability Office, *Employment and Training Programs*, 2019, https://www.gao.gov/assets/700/698080.pdf.

58. Bishop, Addressing the Employment Challenge.

59. “Workforce Innovation and Opportunity Act,” H.R. 803, 113th Cong. (2014), https://www.congress.gov/bill/113th-congress/house-bill/803/text.

60. Texas State Technical College administrators, interview; Taliaferro, interview; St. Louis Community College administrators, interview.

61. Report to the Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, U.S. Senate. United States Government Accountability Office, *Employment and Training Programs*, 2019, https://www.gao.gov/assets/700/698080.pdf.

62. US Department of Veterans Affairs, *Education and Training*, 2019, https://www.benefits.va.gov/gibill/post911_gibill.asp; Congressional Budget Office, “Fair-Value Estimates of the Cost of Federal Credit Programs in 2020,” 2019, https://www.cbo.gov/system/files/2019-05/55179-Post911GIBill.

63. AACC, *Fast Facts*.

64. Congressional Research Service Report, *Bipartisan Budget Act of 2018*, 2018, https://www.everycrsreport.com/reports/R45136.html.

65. National Skills Coalition, *SNAP Employment and Training* (SNAP E&T), 2017, https://www.nationalskillscoalition.org/resources/publications/file/NSC-SNAP-ET-recommendations.pdf.

66. St. Louis Community College administrators, interview.

67. Clark, interview; Texas State Technical College administrators, interview.

68. Iowa Department of Education, *GAP Tuition Assistance Program*, 2019, https://educateiowa.gov/adult-career-and-community-college/community-colleges/gap-tuition-assistance-program.

69. GAP, Handout, Indian Hills Community College, Ottumwa, IA, 2019.

70. Indian Hills Community College administrators, interview.

71. Virginia Career Works, *Workforce Credential Grant*, 2019, https://virginiacareerworks.com/workforce-credential-grant/; High Demand Fields Programs, *New Economy Workforce Credential Grant Program*, Virginia Career Works, 2018, https://virginiacareerworks.com/wp-content/uploads/HighDemandFieldsPrograms031618.pdf.

72. Jacoby, *Rethinking the Mission*.

73. Clark, interview.

74. Ibid.

75. Sunny Deye, *Virginia's FastForward Credentialing Program*, 2018, http://www.ncsl.org/research/education/virginia-s-fastforward-credentialing-program.aspx; Katie Brown, *Putting Pell Grants to Work for Working Students*, 2018, https://www.nationalskillscoalition.org/resources/publications/file/Putting-Pell-Grants-to-work-for-working-students-1.pdf; Jacoby, *Rethinking the Mission*.

76. Jacoby, *Rethinking the Mission*.

77. Clark, interview.

78. Taliaferro, interview; Associated Builders and Contractors, Inc., 2019 *Spring Craft Training Registration*, 2019, https://abchouston.org/2019-spring-craft-training-registration/.

79. Associated Builders and Contractors, Inc. and Construction & Maintenance Education Foundation, *San Jacinto College Central: Spring 2019 schedule,* 2019, https://abchouston.org/wp-content/uploads/2018/10/San-Jacinto-College-Central-Schedule-Spring-2019.pdf.

80. St. Louis Community College administrators, interview.

81. Texas State Technical College administrators, interview.

82. Taliaferro, interview.

83. Shoun, interview; Texas State Technical College administrators, interview.

84. Shoun, interview.

85. St. Louis Community College administrators, interview.

86. Partridge, phone interview.

87. Texas State Technical College administrators, interview.

88. Shoun, interview.

89. Indian Hills Community College administrators, interview.

90. Clark, interview.

91. Clark, interview; St. Louis Community College administrators, interview.

92. Partridge, phone interview.

93. Indian Hills Community College, Lord Fairfax Community College, St. Louis Community College and Texas State Technical College tracked completions. Lord Fairfax tracked industry credentials earned. Texas State Technical College tracked licensure attainment. St. Louis Community College tracked employment after graduation.

94. Indian Hills Community College administrators, interview.

95. Dallas County Community College District administrators, interview.

96. Indian Hills Community College administrators, interview.

97. Texas State Technical College administrators, interview.

98. St. Louis Community College administrators, interview; Indian Hills Community College administrators, interview.

99. St. Louis Community College administrators, interview.

100. Partridge, phone interview.

101. Shoun, interview.

102. ANSI News and Publications, "Workcred Names Board of Directors: Board Members Include Stakeholders from Industry and Nonprofit Sectors," September 30, 2014, https://www.ansi.org/news_publications/print_article?articleid=419af4f6-5de6-45b2-9c03-44a7e0f759ae.

103. Will Markow et al., *The Narrow Ladder: The Value of Industry Certifications in the Job Market*, Burning Glass Technologies, October 2017, https://www.burning-glass.com/wp-content/uploads/BurningGlass_certifications_2017.pdf.

104. Virginia's Community Colleges, *Industry Credentials*, 2018, http://www.vccs.edu/industry-credentials/; Iowa Department of Education, *Industry Certification Report AY 2017-18*, 2019, https://educateiowa.gov/sites/files/ed/documents/Industry%20Certification%20Report_0.pdf.

105. Jenna Leventoff, *Measuring Non-Degree Credential Attainment*, May 2018, https://www.nationalskillscoalition.org/resources/publications/file/measuring-non-degree-credential-attainment-50-state-scan.pdf; Tamar Jacoby and Shaun Dougherty, *The New CTE*, Manhattan Institute, March 2016, https://www.nationalskillscoalition.org/resources/publications/file/measuring-non-degree-credential-attainment-50-state-scan.pdf.

106. State Council of Higher Education for Virginia, *Virginia State University 2017 Six-Year Plan Part II*, https://www.schev.edu/docs/default-source/institution-section/6-year-plans/vsu/2017/vsu-(234)-2017-six-year-plan-part-ii.docx.

107. Partridge, phone interview.

OPPORTUNITYAMERICA

737 8th Street, SE
Suite 201
Washington, DC 20003

opportunityamericaonline.org