

Building a Technically Skilled Workforce

Partnerships between Community Colleges and Industries Are the Key

Louis Soares and Stephen Steigleder January 2012

The third report in a series on U.S. science and economic competitiveness from the Doing What Works and Science Progress projects at the Center for American Progress

About this series on U.S. science and economic competitiveness

The U.S. Congress in late 2010 asked the Department of Commerce to complete two studies as part of the reauthorization of the America COMPETES Act. The first, which was released on January 6th, 2012, at the Center for American Progress, focuses on U.S. competitiveness and innovation. The second, due to Congress in early 2013, offers specific recommendations for developing a 10-year national innovation and competitiveness strategy.

We applaud the commissioning of these reports but believe we cannot afford to wait that long to take action. That's why we convened in the spring of 2011 the group of experts listed on the following page. We spent two days in wide-ranging discussion about the competitive strengths and weaknesses of our nation's scientific endeavors and our economy, before settling upon the topics that constitute the series of reports we publish here. Each paper in the series looks at a different pillar supporting U.S. science and economic competitiveness in a globally competitive economy:

- “Rewiring the Federal Government for Competitiveness”
- “Economic Intelligence”
- “Universities and Innovation Networks”
- “Manufacturers in Innovation Networks”
- “Building a Technically Skilled Workforce”
- “Immigration for Innovation”

The end result, we believe, is a set of recommendations that the Obama administration and Congress can adopt to help the United States retain its economic and innovation leadership and ensure that all Americans have the opportunity to prosper and flourish now and well into the 21st century.

Many of our recommendations are sure to spark deep resistance in Washington, not least our proposal to reform a number of federal agencies so that our government works more effectively and efficiently in the service of greater U.S. economic competitiveness and innovation. This and other proposals are sure to meet resistance on Capitol Hill, where different congressional committees hold sway over different federal agencies and their policy mandates. That's why we open each of our reports with this one overarching recommendation: Congress and President Obama should appoint a special commission to recommend reforms that are packaged together for a single up-or-down vote in Congress. In this way, thorough-going reform is assured.

This new commission may not adopt some of the proposals put forth in this series on science and economic competitiveness. But we look forward to sharing our vision with policymakers as well as the American people. President Obama gets it right when he says, “To win the future, we will have to out-innovate, out-educate, and out-build” our competitor nations. We need to start now.

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Introduction and summary

For the United States to keep its leadership position in the global economy, our workforce must be able to keep pace with the knowledge and innovation that drives the development of new industries. On one end of the spectrum, that means incubating the world's best scientists and engineers to continue to break down scientific barriers and invent new technologies. But highly educated scientists and engineers are only a small part of the overall workforce, comprising approximately 5 million of the nation's 150 million workers.¹ Our long-term economic competitiveness also depends on boosting the education and technical skills of millions of middle-skill workers for careers in emerging and highgrowth industries such as health care, biotech, nanotech, clean energy, and advanced manufacturing.

These types of technically skilled workers generally boast an associate's degree or industry-recognized postsecondary credential, but unfortunately we are falling woefully short in our efforts to develop a sufficient number of these middle-skill workers. We are currently on pace to encounter a shortage of nearly 5 million workers with postsecondary credentials—such as welders and nursing assistants—by 2018.² Such an eventual shortage of qualified workers to fill these skilled positions will result in slower economic growth and a lower standard of living.

But there is a solution. We already have an underlying system in place—the community college system—that can be modified and scaled up to meet our long-term needs for middle-skill workers. The community college system sits at the crossroads of higher education and the professional world. Community colleges serve a more diverse student body than four-year colleges. And they also have experience working directly with private sector employers to design and adapt programs to address specific labor market needs.

To produce more of the skilled workers that America will require to be globally competitive, we recommend implementing a competitive grant program to spur innovation in our community college system. More specifically, the grant competition should be used to scale up the availability of community college and industry partnerships that lead to associate's degrees and one-year certificates with labor market value.

Our proposed Community College and Industry Partnership Grant program would encourage bottom-up collaborations between community colleges and groups of businesses or industries. The grants would combine public and private resources to create alternative college education programs that are tightly linked to regional economic development. By partnering with private industry, these programs ensure that academic credentials are directly linked to current job requirements and that program expansion is based on future job openings.

Indeed, these kinds of private-public partnerships are already proving their worth in meeting the needs of three important constituencies:

- Students and workers obtain postsecondary credentials that prepare them for skilled careers that pay middle-class wages
- Local businesses gain employees with specific skills to match their needs
- Regional economies gain a competitive advantage over their global competitors

We detail two of the more successful of these partnerships in this paper. One involves United Parcel Service, the state of Kentucky, and Jefferson Community and Technical College in Louisville. The other features Columbia Gorge Community College in The Dalles, Oregon, alongside Acciona Energy North America (a unit of Spanish energy company Acciona SA), global engineering company Black and Veatch, chip maker Intel, and the U.S. Army Corps of Engineers to develop a pilot curriculum for a renewable energy technology program.

To expand this kind of necessary collaboration through our proposed Community College and Industry Partnership Grant program, we recommend converting the postsecondary portion of the so-called Perkins Career and Technical Education State Grants—approximately \$300 million to \$400 million annually—into a nationwide grant competition. Shifting to a competitive grant would redirect approximately one-third of Perkins CTE funding, which is now targeted toward these same kinds of middle-skill worker training programs, toward programs with a more direct link to regional labor markets. We also believe that a competition to fund this kind of public-private partnerships holds the greatest potential to spur innovation and attract matching funds from the private sector.

In the pages that follow, this paper makes the case for a competitive Community College and Industry Partnership Grant program. We first discuss our projected shortage of skilled workers and then outline a proposal to increase the number of workers earning associate's degrees and one-year credentials via this grant program—an expansion necessary to support long-term innovation and maintain our economic competitiveness.

Our economic competitiveness depends on the technical skills of millions of middle-skill workers in emerging and highgrowth industries from biotech, to clean energy to advanced manufacturing.

A shortage of skilled workers

As firms create new business models and redesign work practices to stay ahead of global competition, they will need a growing workforce of technicians and mid-level employees with higher-level skills than were necessary in the 20th-century economy. According to the Georgetown University Center on Education and the Workforce, our economy will grow by 14.4 million jobs between 2008 and 2018. Of those net new jobs, 97 percent are expected to be in industries—such as science- and technology-based industries—that will require some form of education beyond high school.³

But by any reasonable measure, our current education and workforce training system is not meeting the demand for better-educated workers. Right now our workforce is too concentrated at the low end of the education spectrum. (See Box and Figure 1.) To maintain our economic competitiveness, we need to provide more opportunities for workers to advance from low-skill and middle-skill careers into middle-skill and high-skill careers.

Wanted: More middle-skill workers

Approximately 44 percent of American workers do not have any education beyond a high school diploma, 26 percent have some college education or an associate's degree, and 30 percent have a bachelor's degree or higher. Those figures fall short of the needs of our increasingly knowledge-based economy.

By 2018, only 37 percent of jobs will be open to workers with a high school diploma, while 30 percent of jobs will require some form of postsecondary education and 33 percent of jobs will require at least a bachelor's degree. As a result, job opportunities available to workers with only a high school education will stagnate. But opportunities for workers with a college degree or postsecondary credential will grow.

Moreover, high-growth science and technology industries are raising the bar for workplace readiness. Employers expect their new hires to arrive on the worksite with a practical mix of academic learning, experience, and adaptability.¹ Going forward, postsecondary education and workforce training will need to integrate classroom learning with hands-on work experience to ensure that technical workers are proficient in up-to-date technologies, can solve real-world problems, and are ready to hit the ground running in today's team-based workplaces.

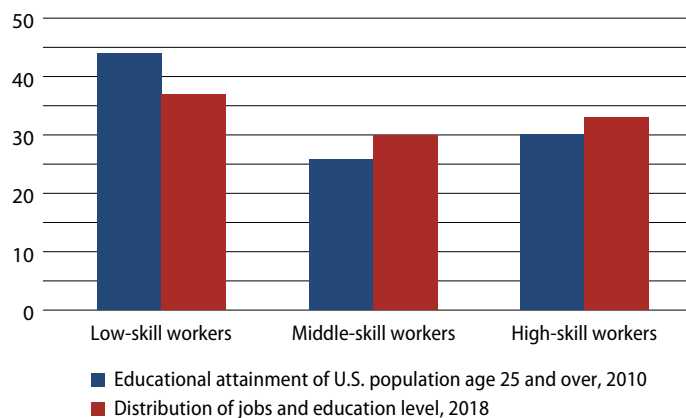
Unfortunately, the various components of our postsecondary education and workforce training system are not working together to provide this combination of skills training and hands-on experience. There are three main reasons why.

First, our postsecondary system of two- and four-year colleges is designed for a full-time student working toward a degree over a fixed and continuous period of time. This lack of flexibility is a huge impediment for the majority of Americans who have already begun their working lives. In reality, 61 percent of adults age 25 and over do not have a college degree or postsecondary credential, including 75 million Americans between the ages of 25 and 54.² But many of those adults could improve their skills in a reasonable amount of time—if offered a flexible program leading to a better career—since 34 million of them already have a high school diploma and an additional 22 million have spent some time in college or postsecondary training.

Second, the Perkins Career and Technical Education program—our largest federal program specifically focused on creating a workforce with technical skills—lacks sufficient scale to meet the growing need for skilled workers. Its meager budget of \$1.1 billion, after an 11 percent cut in Fiscal Year 2011 ending in September, is distributed to states through a population-based formula and then further divided between high school and postsecondary education programs.

The education gap

Educational attainment in 2010 versus projected distribution of jobs by education level in 2018



Source: U.S. Census Bureau; Georgetown University Center on Education and the Workforce.

Furthermore, the Obama administration proposed an additional 11 percent cut to the Perkins Career and Technical Education program in FY 2012 beginning in October. The administration suggested that it “has been difficult to determine whether the program has been effective.”³ But that does not mean postsecondary education and training isn’t a vital component of building a skilled technical workforce. It simply means that we need to fund programs that are more effective at combining technical skills and hands-on experience, are closely connected to regional employers, and have the potential to induce investment from the private sector.

And third, our Workforce Investment Act, or WIA system, is underfunded and too focused on offering short-term crisis intervention rather than building long-term technical skills that impart recognizable value in the labor market. Annual funding for the Department of Labor’s Training and Employment Service—the location of most WIA funding—was reduced to \$3.3 billion in FY 2011, a cut of approximately 13 percent. To put that funding level into perspective, it is less than \$135 for each of the 25 million Americans who are currently unemployed or underemployed.

In addition, the WIA system is largely focused on crisis management, which is understandable since the system is primarily measured by the number of workers who are quickly returned to employment and whether those workers are still employed six months later. While rapid employment is a worthwhile goal, it is not particularly helpful for building a workforce with the type of science and technology skills that will serve as a foundation for the knowledge-based economy. According to the Department of Labor, only 200,000 individuals earn a credential each year through WIA job training programs.⁴

Ultimately, the development of a more competitive workforce will require better integration of these overlapping systems. This will require a hybrid model that combines the educational rigor of higher education with the flexibility and labor-market focus of industry-based workforce training. This hybrid system needs to provide postsecondary credentials through a combination of academic coursework and applied learning so that employees can hit the ground running in science- and technology-based industries. In the following section, we outline one of our recommendations to hasten the development of such a system.

The US is currently ranked at an embarrassing 12th in the world for degree attainment among 25- to 34-year olds.

Community college and industry partnerships

Fortunately, there is already an underlying structure in place that can be modified and scaled up to meet our long-term workforce development needs. The community college system sits at the crossroads of higher education and the professional world. Community colleges serve an estimated 12 million for-credit and noncredit students. They dwarf other postsecondary education providers, including four-year schools and workforce training programs, in terms of access to education and cost of services.

Community colleges also serve a more diverse student body than four-year colleges—including a significant percentage of older students, first-generation college students, and full-time workers. And community colleges have experience working directly with private-sector employers to design and adapt programs to address specific labor market needs.

To build a more competitive and technically skilled workforce, we recommend redirecting \$300 million to \$400 million from the Perkins Career and Technical Education program and using those funds to create a competitive Community College and Industry Partnerships Grant program that integrates higher education with real-life experience. Before we detail this recommendation, though, we need to first demonstrate how well existing community college and industry partnerships work.

Community college and industry partnerships are collaborations between a community college and a group of businesses or industry sector. The partnerships combine public and private resources to create alternative college education programs that are tightly linked to regional economic development. Partners contribute direct funding, human resources, facilities, equipment, and expertise to the programs.

A recent article in *Businessweek* provides an example of one of the nation's most successful community college and industry partnerships.⁵ The article describes the reciprocal relationship between Macomb Community College and the automotive industry in Macomb County, Michigan:

“The county is home to both a GM transmission plant and the GM Technical Center, the company’s main design and engineering complex. Because of its location, the college has long had a symbiotic relationship not only with GM—Macomb Community College President James Jacobs estimates that 40 percent of the designers there studied at Macomb—but with most of the local manufacturing sector, providing companies with graduates while drawing on them for funding, faculty, and even state-of-the-art equipment. Haas Automation, the country’s largest machine tool maker, supplies the college with CNC mills and lathes. All of the Big Three have outsourced training for their own employees to the college over the years, collaborating to design curricula and tests. Macomb has a deep familiarity with the workforce needs of those companies and connections with the people who do the hiring. The result is an informal system that quickly matches workers with the labor needs of companies.”

The purpose of these partnerships is to develop alternate pathways to postsecondary credentials that are explicitly linked to the labor market. By partnering with private industry, these programs ensure that academic credentials are directly linked to current job requirements and that program expansion is based on future job openings. This is particularly important for individuals who are not on a traditional college track.

We believe that programs should always lead to a postsecondary credential such as an associate’s degree, occupational license, or technical certification. Such credentials are portable and provide an additional level of stability for middle-skill workers. Over the long term, it would be preferable to have nationally recognized credentials to ensure the highest degree of flexibility for skilled workers, but current industry-recognized credentials and state certifications are a good place to start.

Successful community college and industry partnerships meet the needs of three important constituencies:

- Students and workers obtain postsecondary credentials that prepare them for skilled careers that pay middle-class wages

The community college system is ideally positioned to address the challenges of building a skilled technical workforce, but it must be built upon.

- Local businesses gain employees with specific skills to match their needs
- Regional economies gain a competitive advantage over their global competitors

The community college system is ideally positioned to address the challenges of building a skilled technical workforce. Community colleges already serve millions of adult workers who are going back to school to earn specific skills to advance their careers. Community colleges are accredited to dispense degrees and industry-recognized credentials that certify those skills have been achieved. And community colleges have the flexibility to work directly with regional employers to ensure that academic curricula stay up-to-date with current industry standards.

Examples of community college and industry partnerships

The following two case studies exemplify the type of community college and industry partnerships that we believe need to be expanded to develop a competitive workforce. These examples are taken from a previous paper, “[The Power of the Education-Industry Partnership](#),”⁶ by one of this paper’s authors. The examples demonstrate the success that is possible when community colleges and private industry work together to design programs that are equally beneficial to students and employers.

The first case study involves United Parcel Service. In 1996, UPS considered moving its hub from Louisville, Kentucky, because it was having trouble staffing its Next Day Air shift. As the largest employer in the state, the loss of UPS would have been devastating to local residents and the regional economy. Fortunately, the temporary crisis led to a long-term and mutually beneficial partnership between UPS, the state of Kentucky, and Jefferson Community and Technical College in Louisville.

The result of this industry partnership is Metropolitan College—a collaboration among UPS, state and local government, and the public college system. UPS provides part-time employment for students in the program, pays half the cost of tuition, and provides reimbursement for textbooks. The state and local governments pay the other half of tuition and provide students with access to JCTC and the University of Louisville. Students who participate in Metropolitan College work part-time on the Next Day Air night shift with full-time benefits while attending college during the day.

The Metropolitan College Program has been extremely successful. Prior to its inception, only 8 percent of UPS workers had a postsecondary degree. A decade later, that figure increased to approximately 45 percent of the UPS workforce. In addition, UPS increased job retention as the annual turnover rate for new hires went from 100 percent in 1998 to 20 percent in 2009, which created a 600 percent return on investment in its students.⁷

Many community college-industry partnerships, like the UPS example, begin with a workforce need expressed by an individual employer. Other partnerships begin with a community college that recognizes a regional economic sector challenge and calls upon businesses to help it meet the challenge. These sector initiatives can be hugely beneficial to both the college and the industry, but it takes initiative on the part of the community college to recognize a change in the workforce and act upon it.

The second case study occurs in the Pacific Northwest. In 2006, Columbia Gorge Community College in The Dalles, Oregon, noted the emergence of a wind energy industry around the college and took the initiative to start a new program that would address regional employment opportunities. As windmills went up, turbine companies needed a local workforce to service them. Columbia Gorge Community College saw an opportunity to fulfill a workforce need while also working with existing resources at the college to create a postsecondary credential in the wind energy field.

The community college partnered with industry and workforce development representatives—including Acciona Energy North America, a unit of Spanish energy company Acciona SA; global engineering company Black and Veatch Corp., chip maker Intel Inc., and the U.S. Army Corps of Engineers—to develop a pilot curriculum for a renewable energy technology program. These partnerships included input from industry representatives as well as professional development opportunities for the community college faculty.

Columbia Gorge Community College relied upon donations from industry, but it also drew upon the college's existing resources to shape its new Renewable Energy Technology Program. The college now offers one- and two-year programs that prepare students to work in wind-generation, hydro-generation, automated manufacturing, and engineering technician work. More than 100 students enroll in the program each year and the college reports that 80 percent of completers who want to work in a wind plant are hired.⁸

We need to provide more opportunities for workers to advance from low-skill and middle-skill careers into middle-skill and high-skill careers.

Best practices

Although community college and industry partnerships are created as unique solutions to specific regional economic circumstances, a set of best practices is beginning to take shape. According to the League of Innovation in Community Colleges, an international advocacy organization, successful partnerships include the following characteristics:⁹

- **Shared resources.** Partnerships require a real commitment from both sides. Partners contribute direct funding, human resources, facilities, equipment, and expertise to ensure that programs are mutually beneficial and sustainable.
- **Curriculum and instructional transformation.** Partnerships find new and innovative ways to deliver high-quality instruction. Employers guarantee that academic coursework and hands-on experience are directly linked to industry practice in the real world. Partnerships provide new examples of contextualized, modularized, and competency-based curriculum; accelerated degree completion; workplace-based learning; and learn-and-earn models.
- **Academic and social support.** Partnerships create sustained academic and career navigation supports for students. Examples include forming small learning communities or funding a career center that provides financial aid, academic advising, and career advising.
- **Professional development.** Partnerships provide resources for community college faculty to maintain up-to-date skills and industry knowledge. Faculty members coordinate with employers to design new curricula, integrate academic and technical coursework, and track student progress and employer needs.
- **System-wide improvement.** Partnerships generate system-wide changes in a community college's mission, strategic planning, and resource allocation. They simplify enrollment for nontraditional students and prompt community colleges to find new ways to offer credit for learning technical skills—such as articulation agreements, prior learning assessments, and competency-based evaluations.

These best practices can and should become key components of our competitive Community College and Industry Partnerships Grant program. To this we now turn.

Community college
and industry
partnerships are
collaborations
between a
community college
and a group of
businesses or
industry sector.

Taking community college and industry partnerships to the next level

Our first choice to fund our competitive Community College and Industry Partnerships Grant program would be to fulfill President Obama's American Graduation Initiative, which proposed to spend \$12 billion over 10 years to return the United States to having the highest proportion of college graduates in the world by 2020.¹⁰ We are currently ranked at an embarrassing 12th in the world for degree attainment among 25- to 34-year olds. Unfortunately this important initiative has already been scaled down to \$2 billion and is too small to accomplish the ambitious goals of the original American Graduation Initiative.

Therefore, recognizing that new investments in workforce development will likely be opposed by conservatives in Congress, our second choice to fund this initiative is to use \$300 million to \$400 million that is currently allocated to the Perkins Career and Technical Education program. Perkins Career and Technical Education is the largest federal program focused on creating a workforce with technical skills. It provides approximately \$1.1 billion annually to support high school and community college programs across all 50 states, the District of Columbia, and our outlying territories.

But the program is not targeted well enough to support the level of innovation this country needs. The current method of distributing Perkins Career and Technical Education funding through a population-based formula simply reinforces the status quo, which will lead to a projected shortfall of nearly 5 million middle-skill workers by 2018.¹¹

This is why we recommend converting the postsecondary portion of Perkins Career and Technical Education State Grants—approximately \$300 million to \$400 million annually—into a nationwide grant competition focused on expanding community college and industry partnerships. Shifting to a competitive grant would redirect Perkins Career and Technical Education funding to programs with the most direct link to regional labor markets. We also believe that a competition

to fund Community College and Industry Partnerships Grants holds the greatest potential to spur innovation and attract matching funds from the private sector.

The competition would be modeled on similar competitive grant programs managed by the departments of Education and Labor. Grants would be awarded to partnerships that demonstrate the greatest potential to leverage private-sector investment, combine academic instruction and hands-on professional experience, and expand education and training opportunities for students and workers who aren't being adequately served by the current system.

Purpose

The purpose of the grant competition would be to stimulate the development of alternative pathways to earning an associate's degree or industry-recognized credential. These pathways should combine the academic rigor of higher education with the flexibility and hands-on experience of an industry-sponsored job-training program. Specifically, the competitive grant application process must emphasize education and training activities based on certain eligibility requirements and the commitment of matching funds. Let's look at each these requirements briefly in turn.

Education and training activities

A broad range of activities would be eligible for grant funding. Applicants, however, would need to demonstrate how their proposed programs align with industry partnership best practices, as described in the previous section of this paper. Those best practices are:

- Shared resources
- Curriculum and instructional transformation
- Academic and social support
- Professional development
- System-wide improvement

Partnerships would be encouraged to develop programs that are not based on the traditional academic calendar. The typical semester-based system—beginning in late August and ending in early June—is completely unrelated to the amount of

time it takes to learn a subject or master a skill. So there is no reason to assume that a new program needs to be taught in a traditional semester format.

Within the partnership, community colleges also would be tasked with developing a method to award credit toward a degree or credential. Conversely, employers would be charged with ensuring that program assessments are tied to practical industry standards and lead to degrees and credentials that are portable and recognized by the industry sector.

In order to encourage sustained, systemic change to community college instructional delivery, grant funding should be targeted to institutions that are willing to overhaul their course offerings to fully integrate academic and vocational skill development. Community colleges have historically operated these programs as separate entities within their governance and business models, including separate operations, staff, and funding mechanisms.

Our proposed Community College and Industry Partnerships Grant program should be designed to eliminate these silos by combining classroom learning with real-world content. Any attempt to simply “bolt on” a sector strategy to a school’s existing academic curriculum should be rejected.

Additionally, this grant program would be an ideal candidate for inclusion in a broader federal “Common Application” grant program, as described by our colleagues Jonathan Sallet and Sean Pool in “Rewiring the Federal Government for Competitiveness,” the first paper in this series.

Eligibility and matching funds

The potential impact of this grant competition is based on its ability to maximize federal investment in education and workforce training by leveraging private-sector resources. So it is important to establish minimum requirements for a partnership’s matching funds. To be eligible for a competitive federal grant, partners need to have skin in the game.

At a minimum, we expect the partnerships to provide matching funds worth 50 percent of the total grant. For instance, a partnership applying for a \$2 million grant should contribute an additional \$1 million in matching funds, for a total program budget of \$3 million. For community colleges and employers, matching

To be eligible for a competitive federal grant, partners need to have skin in the game.

funds will most likely come in the form of instructors, facilities, equipment, and tuition payments, among other possibilities. Partners are encouraged to pool resources to make joint purchases for the proposed program. In-kind contributions are also highly encouraged, although partners should not be able to fulfill 100 percent of their matching requirements through in-kind contributions.

Grant proposals should demonstrate full buy-in from the partners, including cash contributions. Partnership applications that offer higher levels of private-sector matching funds should receive preference in the grant competition if the additional resources would lead to more students and workers earning degrees and credentials. To be eligible, partnerships would have to include the following entities:

- **A community college or consortium of community colleges.** Similar to the Department of Labor’s Trade Adjustment Assistance Community College and Career Training Grant, eligibility would be limited to institutions of higher education that offer programs that can be completed within two years.¹²
- **An employer or consortium of employers.** Similar to the Department of Labor’s H-1B Technical Skills Training Grants, eligibility would be extended to partnerships that include multiple businesses in an industry cluster, which is a concentration of interconnected businesses, suppliers, research and development, service providers, and associated institutions in a particular field linked by common workforce needs.¹³

In addition, expanding the partnerships to include nonprofits, unions, workforce investment boards, and regional development boards would be highly encouraged. Additional partners, however, would be expected to make contributions toward the partnership’s matching fund requirement.

Criteria

Grant applications would be evaluated according to three main criteria. The first is the partnership’s potential to expand the availability of alternative pathways to earning an associate’s degree or industry-recognized credential. Right now our community college system too often considers workforce training to be a distraction from its core mission. And workforce training too often focuses on short-term programs that do not result in degrees or credentials that workers

Grant applications would be evaluated according to three main criteria: expanding opportunities, serving non-traditional learners, and private sector investment leverage.

will take with them from workplace to workplace. Grant applicants should be evaluated according to their ability to hasten the convergence of these unnecessarily disparate systems.

The second criterion is the partnership's ability to serve "nontraditional" learners. There are 75 million Americans between the ages of 25 and 54 who lack a college degree or postsecondary credential. Grant applicants should be evaluated according to their ability to help these workers move up the education and training ladder.

The third is the partnership's ability to leverage private sector investment. According to the Georgetown University Center on Education and the Workforce, private sector businesses spend approximately \$140 billion annually on formal job training programs. This is substantially more than the \$54 billion worth of public funds invested annually in two-year colleges and job training programs.¹⁴ Grant applicants should be evaluated according to their ability to increase access to education and workforce training by leveraging private sector cooperation and resources.

Applicants would be expected to address each of these criteria in their grant applications.

Conclusion

In its current form, our education and workforce training systems will not be able to develop a sufficient number of skilled workers to meet the country's future economic needs. We are currently on pace to encounter a shortage of 3 million workers with college degrees and nearly 5 million workers with industry-recognized credentials by 2018.¹⁵ Part of the shortfall is due to underfunding of education and training programs; unfortunately, in the short term it is unlikely that the federal government will significantly increase its investment in these vital programs. So it becomes increasingly important to use existing resources to spur innovation and leverage private sector investment to develop a competitive workforce.

A substantial expansion of Community College and Industry Partnerships through our proposed competitive grant program offers the opportunity to build a more competitive workforce by aligning community college programs with high-growth industries in regional labor markets. Expanding these partnerships has the potential to increase the number of workers earning postsecondary degrees and credentials, while improving the value of those degrees and credentials by tying them directly to the needs of regional employers. While this transition is not sufficient to solve our national shortage of skilled workers, it is an improvement for workers, employers, and taxpayers, and a step toward rebuilding a strong middle class.

About the authors

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Endnotes

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About the Center for American Progress

The Center for American Progress is a nonpartisan research and educational institute dedicated to promoting a strong, just and free America that ensures opportunity for all. We believe that Americans are bound together by a common commitment to these values and we aspire to ensure that our national policies reflect these values. We work to find progressive and pragmatic solutions to significant domestic and international problems and develop policy proposals that foster a government that is “of the people, by the people, and for the people.”

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About Science Progress

Science Progress, a project of the Center for American Progress, is designed to improve public understanding of science and technology and to showcase exciting, progressive ideas about the many ways in which government and citizens can leverage innovation for the common good. Since its inception in the fall of 2007, Science Progress has helped shape the conversation about our country's investment in science.

science progress

About Doing What Works

CAP's Doing What Works project promotes government reform to efficiently allocate scarce resources and achieve greater results for the American people. This project specifically has three key objectives:

- Eliminating or redesigning misguided spending programs and tax expenditures, focused on priority areas such as health care, energy, and education
- Boosting government productivity by streamlining management and strengthening operations in the areas of human resources, information technology, and procurement
- Building a foundation for smarter decision-making by enhancing transparency and performance measurement and evaluation

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