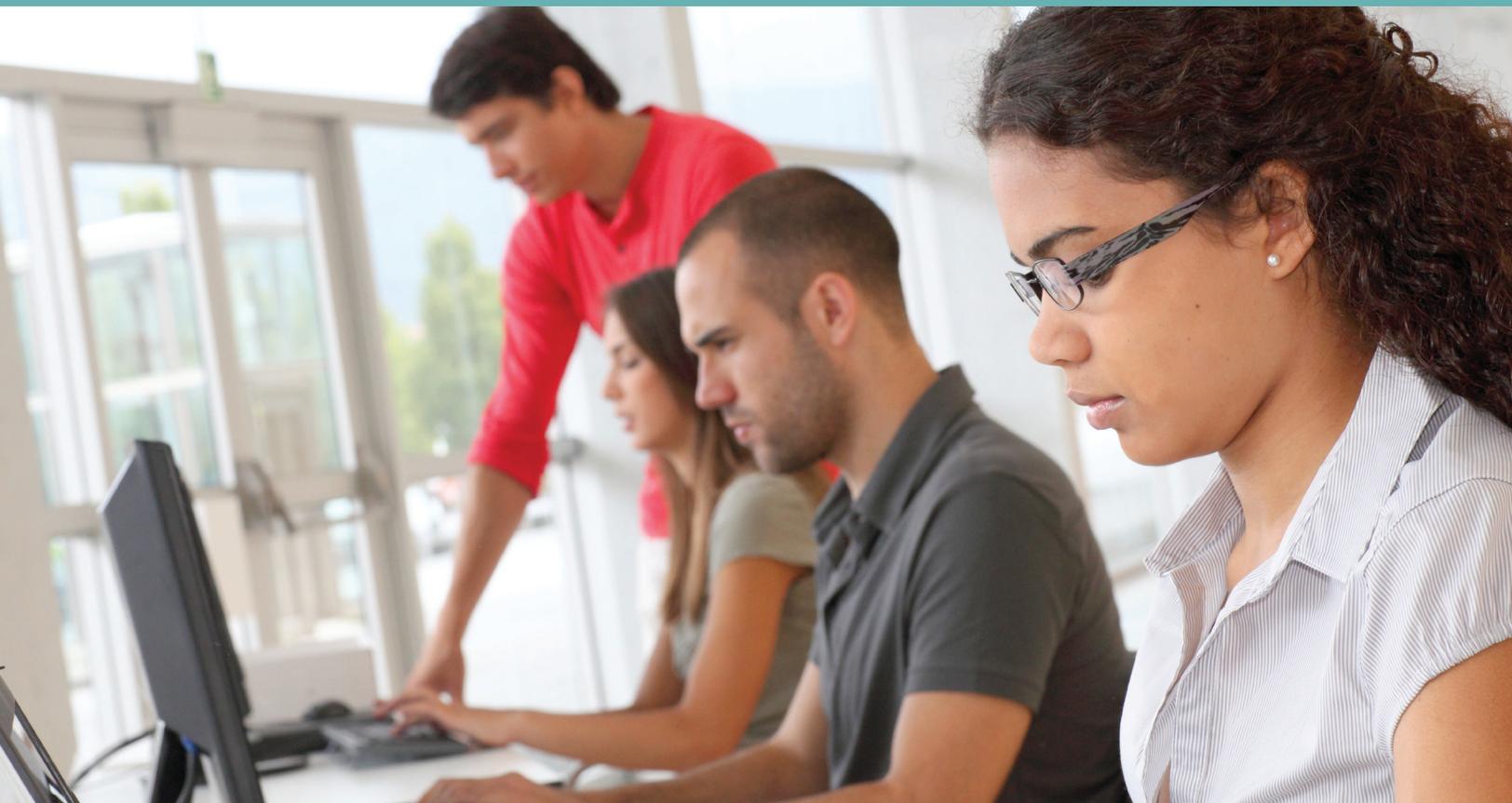


# Raising Job Quality and Skills for American Workers: Creating More-Effective Education and Workforce Development Systems in the States

Harry J. Holzer



## MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that “prudent aids and encouragements on the part of government” are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.





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NOTE: This discussion paper is a proposal from the author. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in discussion papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This discussion paper is offered in that spirit.

**BROOKINGS**

# Abstract

To improve the employment rates and earnings of Americans workers, we need to create more-coherent and more-effective education and workforce development systems, focusing primarily (though not exclusively) on disadvantaged youth and adults, and with education and training more clearly targeted towards firms and sectors that provide good-paying jobs. This paper proposes a new set of competitive grants from the federal government to states that would fund training partnerships between employers in key industries, education providers, workforce agencies, and intermediaries at the state level, plus a range of other supports and services. The grants would especially reward the expansion of programs that appear successful when evaluated with randomized controlled trial (RCT) techniques. The evidence suggests that these grants could generate benefits that are several times larger than their costs, including higher earnings and lower unemployment rates among the disadvantaged.

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# Chapter 1: Introduction

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In 2008 and 2009, the U.S. economy shed more than 8 million jobs; since 2009, the economy has created only about 2 million. Most economists expect the labor market to continue to recover slowly from the Great Recession over the next several years. But, while we remain very concerned about the quantity of jobs that the U.S. economy creates in the short term, we should also focus on the quality of these jobs—in terms of the pay and benefits they provide—and that means paying attention to the skills of the workers who will fill them.

Currently, our economy generates workers with too little education to prosper in the labor market, and with too few of the more specific skills often sought by employers with jobs that pay relatively well. Finding too few skills among potential workers, employers likely create fewer such good jobs than they otherwise might. In today's more competitive product and labor markets, employers will only create such jobs if the productivity of their workers can potentially match their higher levels of compensation. But employers, doubtful about the productive potential of their workers, often choose to compete based only on low costs rather than on better worker performance.

Instead, we should make it easier for employers to create and fill good jobs with highly productive workers. To do so, we need to create and fund more-coherent and more-effective education and workforce development systems. These systems should place their primary emphasis on providing more assistance to at-risk youth, both in school and out, and also to adult workers who are disadvantaged. Furthermore, these programs should take advantage of the latest evidence on effective training to maximize their impact.

A new empirically based consensus has developed from rigorous economic research; it finds that education and training programs that are clearly targeted towards firms and sectors providing good-paying jobs tend to be successful in raising participant earnings. Studies using randomized controlled trials (RCT) evaluation techniques, the gold standard of empirical evidence, have highlighted the importance of linking training programs with employer and labor market needs; evidence from these studies forms the foundation of my proposal.

To raise the employment and productivity of American workers, I propose a new federal competitive grant program that funds evidence-supported training programs at the state level. At a cost of roughly \$2 billion per year, the program would underwrite a range of efforts aimed at educating workers for jobs in firms that pay well and in growing industries. Rather than reinventing the wheel, this program would build on the efforts already made in many states to integrate those states' education and workforce systems and to target key sectors on the demand side of the labor market more effectively (Center for Best Practices 2009).

Grants would be awarded to partnerships between secondary and postsecondary institutions, employers from key industry sectors, workforce agencies, and intermediaries. The grants would fund a range of evidence-based educational and training activities for workers that have low incomes or less education. The grants also could fund support systems for students such as career counseling activities or child care while students are in training, and could be used to provide technical assistance or tax credits, or both, to firms that create good-paying jobs and fill them through appropriate workforce strategies.

These activities not only would help generate education and workforce systems that are more effective, but also would encourage states to integrate these systems with their economic development activities. These funds would be used to leverage existing and potentially new private and public sources of funding, and would encourage efficient use of funds in a sustained manner over time. Evidence from rigorous evaluations suggests that such investment could potentially generate benefits several times as high as the investment itself. While the program is mostly designed to create better-skilled workers and more good-paying jobs over the longer term, it could also help reduce the nation's current high unemployment rate in the next few years.

# Chapter 2: Research Evidence

## THE PROBLEM

The growth in education levels among Americans in recent years has not been sufficient to keep up with the growing demand for skills in the labor market, thus leading to earnings stagnation and growing inequality (see, e.g., Goldin and Katz 2008). Gaps in educational attainment between Americans from higher- versus lower-income backgrounds are large and perhaps widening, as are the gaps in achievement between these groups (Bowen, Kurzweil, and Tobin 2004; Reardon 2010). Too many Americans—nearly 25 percent—fail to finish high school, much less obtain a postsecondary credential of some kind (Autor 2010; Carnevale and Rose 2011; Heckman and Lafontaine 2007). Given the very high return to education in the U.S. labor market, the groups that lag behind in educational attainment—particularly the disadvantaged—suffer low earnings over their entire working lives (see, e.g., Blank, Danziger, and Schoeni 2007).

But, in addition to the quality and skills of American workers, their earnings also depend importantly on the quality of their jobs, and of the “match” between their current skills and the skills required in good-paying jobs. For any general skill level of workers, high-paying jobs are more likely to be found in some industry sectors than in others, and some firms (often

called “high-road employers” or those with “high performance work systems” in the literature) choose to pay more than others, even within the same industry and local labor market (Abowd and Kramarz 1999; Appelbaum, Bernhardt, and Murnane 2003; Krueger and Summers 1987). Since labor markets (and the product markets they serve) are increasingly competitive, high-road employers must be able to offset their higher compensation levels with higher worker productivity; their human resource policies thus are designed to generate highly productive workers with lower turnover than workers at their lower-wage competitors.

But firms might not choose to create a socially optimal number of high-quality jobs on their own, because of a variety of market failures. For one thing, many employers have very limited knowledge of different compensation and human resource options that might generate highly productive workers who are well compensated (Appelbaum et al. 2003). Furthermore, the ability of employers to choose the “high road” might be constrained by the quality of workers whom they perceive to be available for hiring, in terms of basic and occupational skills. And employers might be reluctant to invest their own resources in training workers for a variety of reasons.<sup>1</sup>

**TABLE 1**  
Distribution of Employment (Percentages) across Job Quality Quintiles, 1992 vs. 2003

	1992					2003				
	Job Quality Quintile (1=Highest)					Job Quality Quintile (1=Highest)				
Worker Skills Quintile	1	2	3	4	5	1	2	3	4	5
1	63.6	26.3	8.0	1.9	0.3	67.7	22.4	7.6	1.8	0.6
2	25.8	34.1	23.2	13.0	3.9	24.9	38.6	24.4	9.9	2.2
3	9.3	25.7	33.7	21.9	9.4	10.5	25.6	33.7	22.4	7.8
4	2.4	12.6	25.5	37.9	21.6	3.7	6.8	24.2	40.0	25.4
5	0.2	1.6	10.2	26.8	61.1	2.4	2.5	7.8	27.2	60.1

Note: Rows sum to 100 percent. Job quality and worker skills are measured as firm and worker fixed effects using longitudinal data from the Longitudinal Employer Household Dynamics program, U.S. Census Bureau.

Source: Holzer et al. (2011).

When employers do create good-paying jobs, the evidence suggests that the match between these jobs and the skills of workers filling them is growing more important. Drawing on longitudinal data on both workers and firms for a dozen states during the 1990s and 2000s, a recent book by Holzer, Lane, Rosenblum, and Andersson (2011) identifies a rising correlation between measures of worker and job quality over time (see Table 1). The fractions of the jobs in the top quintile of quality that are filled by workers in the top quintile of skills grew in this period, as did the fraction of lower-paying jobs (especially in the fourth quintile) filled by less-skilled workers.<sup>2</sup>

Furthermore, the locus of the “good jobs” is changing, with many fewer available in manufacturing and more appearing in the professional and financial services, health care, construction, and even the high end of retail trade (see Table 2). And the decline in good job availability in manufacturing is concentrated among the least-skilled workers, whose employment there declined dramatically; in contrast, employment in manufacturing for workers in the highest-skilled quintiles declined only mildly.<sup>3</sup>

Fortunately, the data show that good jobs are not disappearing in general. If anything, Holzer and colleagues (2011) show that the numbers of jobs in the highest quintile of quality actually grew during the period from 1992 to 2003, but most of the high-paying jobs require a strong set of basic cognitive or communication skills, or both. While many do not require a four-year college diploma (outside of the professional and financial services), they generally require some kind of postsecondary training and certification.

Positions in health care often include a variety of nursing categories as well as technicians. In construction, positions usually include the skilled crafts (electricians, plumbers, carpenters) that can be filled through apprenticeships or other training models. In manufacturing, they often include not only engineers, but also machinists, precision welders, and other highly skilled workers (Holzer 2011). Similarly, Figure 1 (from Carnevale, Smith, and Strohl 2010) indicates a range of sectors or occupations where workers with some college or an associate’s degree enjoy relatively high earnings. These positions include managerial and professional jobs, jobs in the STEM fields (science, technology, engineering, and math), health care, sales, office support jobs; and even jobs in blue-collar fields. Elsewhere, Carnevale and colleagues (2010) show that a significant share of workers with occupational licenses or certificates as well as those with associate’s degrees earn more than the median worker with a bachelor’s degree in key fields.

Despite the value of the skills required for these jobs, certain well-documented problems in our education and workforce systems mean that too few workers make investments that

would allow them to fill these good-paying jobs. For example, many students currently attend two-year or four-year institutions but achieve too little there to improve their labor market outcomes. Dropout rates are extremely high, especially in community colleges, where many youth and adults—especially those from minority or low-income communities—are stuck in remedial classes from which they never emerge, and are completely separated from the classes that could provide relevant occupational training. As a result, most community college students never earn even an occupational certificate, much less an associate’s degree. Data from the American Association of Community Colleges indicate that 12.4 million students attended community college in the fall of 2008, about 7.4 million for credit, yet fewer than a million associate’s degrees or certificates were awarded in the 2007–2008 school year (2011). Bailey, Leinbach, and Jenkins (2005) also find that fewer than half of all community college students have completed a degree or certificate after five years; completion rates are lower among minorities and those with low incomes.

In Germany and elsewhere in Europe, training that helps workers prepare for good labor market opportunities is delivered through high-quality career and technical education (CTE). Such systems have not developed in the United States, at least partly because of historical controversies here over “tracking” minority students away from college (Hoffman 2011; Symonds, Schwartz, and Ferguson 2010). But, at its best, CTE would not deter students from attending postsecondary institutions, and might indeed be structured to better prepare and encourage more students to do so.

Indeed, it is often not until after entering the labor market and then becoming unemployed that many disadvantaged workers are provided their first valuable career guidance. Such guidance is provided quite cost-effectively to workers at more than 3,000 One-Stop offices around the country, funded through the U.S. Department of Labor’s Workforce Investment Act (WIA) in the form of “core” and “intensive” services plus limited training (Besharov and Cottingham 2011). In contrast, little career guidance—especially guidance based on local or state labor market data—is provided to high school or community college students (Soares 2010). Furthermore our colleges and these workforce institutions are largely isolated from one another in many states, with little effective interaction on the ground. Local workforce boards, which disperse funds provided through WIA, do not always effectively represent the employers with the best-paid jobs and with strong demand in growing industries, and are not always integrated with state and local economic development efforts.

Even when college students know that earnings and labor market demand are strong in certain fields, such as nursing or

TABLE 2

## Distribution of Employment (Percentages) within Job Quality Quintiles, 1992 vs. 2003

	1992					2003				
	Job Quality Quintile (1=Highest)					Job Quality Quintile (1=Highest)				
	1	2	3	4	5	1	2	3	4	5
<b>Industry</b>										
Agriculture	0.2	0.6	0.8	1.2	6.0	0.2	0.5	0.7	1.1	5.2
Mining	0.9	0.3	0.2	0.2	0.1	0.5	0.2	0.1	0.1	0.0
Utilities	3.2	1.4	0.3	0.1	0.0	2.3	1.0	0.2	0.1	0.1
Construction	5.9	4.9	3.1	2.2	1.7	6.7	5.6	3.9	2.7	1.7
Nondurable Manufacturing	12.5	13.7	9.4	5.9	6.4	9.2	9.9	6.3	4.1	3.2
Durable Manufacturing	24.0	12.6	7.7	5.5	3.4	15.2	9.3	6.0	4.1	2.1
Wholesale Trade	7.0	5.6	4.4	2.7	2.1	7.8	5.7	4.8	2.6	2.0
Retail Trade	4.3	4.7	12.4	21.4	15.5	5.8	5.8	14.7	21.4	13.6
Transportation	2.4	4.9	4.2	3.3	3.1	2.6	4.5	4.2	3.5	2.8
<b>Services</b>										
Information	7.9	2.4	1.7	1.6	1.6	7.8	3.1	1.4	1.2	1.5
Finance	6.2	9.6	6.3	3.2	0.5	8.1	9.6	4.4	2.4	0.5
Real Estate	1.1	0.9	1.1	1.0	1.3	1.4	1.1	1.3	1.2	1.5
Professional Services	11.0	3.5	2.1	1.2	2.1	13.5	3.8	2.1	1.5	3.2
Management	1.6	1.1	0.4	0.3	0.2	1.5	1.3	0.5	0.2	0.2
Administrative	2.5	2.2	3.3	6.9	10.3	4.2	3.6	4.8	9.0	13.8
Education	0.2	2.8	12.3	19.7	12.5	0.6	2.7	12.9	21.2	13.4
Health Care	2.8	15.8	17.5	8.0	6.8	4.5	16.7	18.4	8.5	7.6
Entertainment	0.4	0.4	0.8	1.8	2.8	0.6	1.0	1.2	2.0	3.6
Accommodation and Food	0.6	1.1	3.3	9.4	18.9	1.1	1.6	3.1	8.3	19.0
Other	1.5	1.3	1.4	2.0	3.0	1.5	1.5	1.6	1.8	3.4
Public Administration	3.7	10.2	7.1	2.6	1.7	5.0	11.5	7.4	2.8	1.7

Note: Columns sum to 100 percent. Job quality is measured on the basis of firm fixed effects using longitudinal data from the Longitudinal Employer Household Dynamics program, U.S. Census Bureau.

Source: Holzer et al. (2011).

health technology, they often find only limited instructional capacity in these areas in many colleges. This might be because there are few incentives for institutions to meet labor market demand, or because their per student subsidies from state governments do not depend on degree or certificate completion rates or on what kinds of credentials students earn.<sup>4</sup>

As a result, not only do too few workers obtain certificates and degrees, but also those obtained are often not well matched to labor market demand in key sectors. Under these circumstances, when employers create high-paying jobs at the middle and high ends of the skill spectrum, they often have some difficulty filling them with skilled workers. Indeed, the job vacancy rate has averaged 2.2–2.3 percent over the past

year, which is relatively high, given an unemployment rate of more than 9 percent. Even in some sectors where vacancy rates are not high overall—such as manufacturing—the ratio of vacancies to new hires is striking, suggesting that employers have some difficulty filling vacant positions.<sup>5</sup>

All of this suggests that programs designed to improve the skills and productivity of U.S. workers, if they also work carefully with targeted employers and industries, could fill some vacant jobs that currently exist and perhaps encourage employers to create more jobs over time. The programs should thus help reduce unemployment and job vacancies in the short term while also raising worker earnings in the longer term.

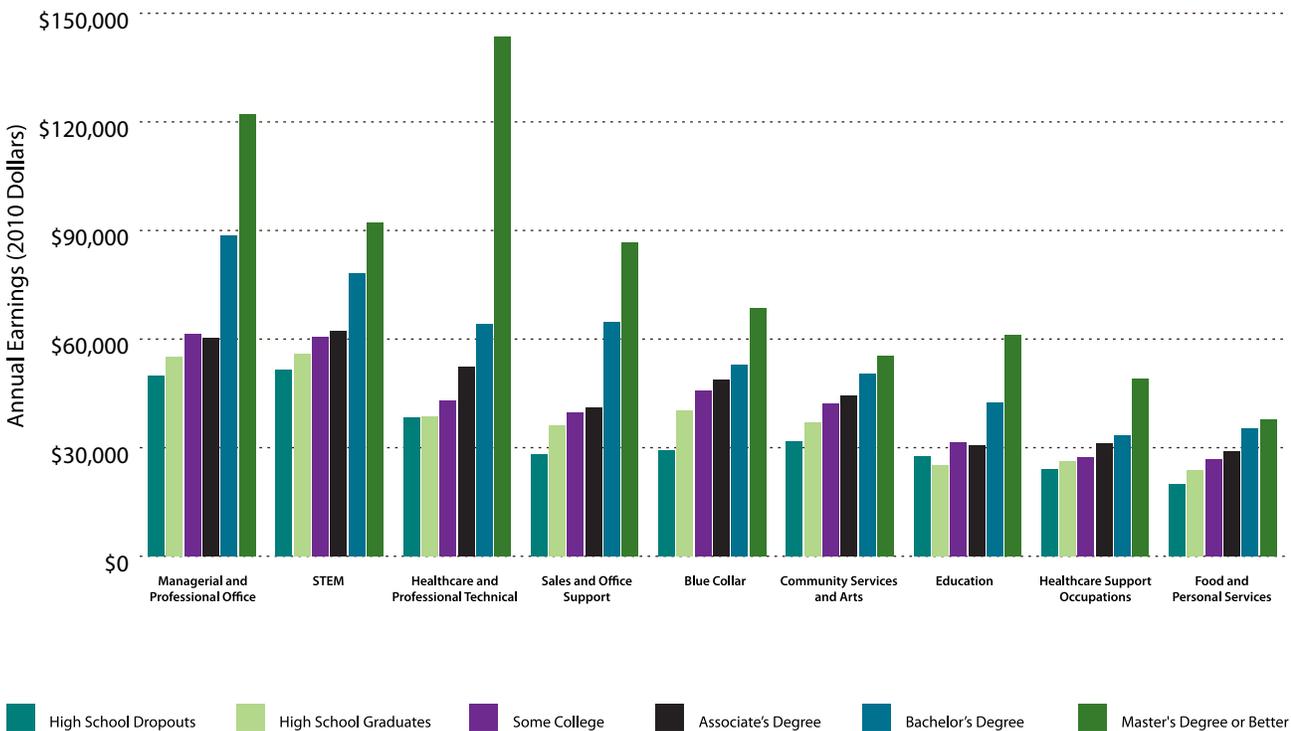
## POTENTIAL SOLUTIONS: EDUCATION AND TRAINING FOR GOOD JOBS

One path to creating good jobs for disadvantaged workers involves raising their skills and productivity to make them more attractive to potential employers. A rigorous body of evidence suggests that certain education and training efforts can be cost-effective for addressing these issues, even when brought to substantial scale. While the overall evidence on the cost-effectiveness of job training for disadvantaged workers in WIA and elsewhere is at least modestly positive (Heinrich, Mueser, Troske, Jeon, and Kahvecioglu 2009; Heinrich and King 2010; Holzer 2009), there are some particularly strong examples that demonstrate the effectiveness of education and training that target good-paying jobs on the demand side of the labor market and that are coordinated with employers there. The best studies have demonstrated results from these programs using experimental methods from RCTs, though some fairly persuasive nonexperimental evidence exists. RCT studies are important because they allow researchers to compare the labor market outcomes of those who receive

training to the outcomes of those who do not to demonstrate the benefits and costs of each intervention.

The most important recent study is the Sectoral Employment Impact Study (SEIS) of three major programs in Boston, New York City, and Milwaukee, Wisconsin, conducted by Public/Private Ventures (Maguire, Freely, Clymer, Conway, and Schwartz 2010). The evaluation used random assignment methods to test for program impacts on workers' subsequent earnings, and it found that three to six months of well-targeted training generated large impacts on earnings in all three programs in the second full year after random assignment. Net impacts on earnings were about \$4,500 per participant over the twenty-four-month period after random assignment, but about \$4,000 in the second year, once training was completed. Direct costs of the program remain uncertain, but have been estimated at two of the three sites (by program staff/ leadership) to be about \$6000 per worker.<sup>6</sup> Assuming that the large earnings gains persist into the third year, the program is clearly cost-effective.

**FIGURE 1:**  
Average Earnings of US Workers by Educational Attainment within Occupation/Industry Groups



Note: In 2010 dollars.  
Source: Carnevale et al. 2010.

The study's authors have attributed the programs' success to the close relationships between employers, training providers and the intermediaries who coordinate their efforts. Improved earnings were the results both of higher employment rates and higher wages for training participants. Since the three programs evaluated are moderately large, the evaluation demonstrates that effective programs can potentially be brought to scale.

Impacts of similar magnitudes have been estimated recently in a random assignment study of Year Up, a sectoral training program for out-of-school youth. The program trained youth from eighteen to twenty-four years old from low-income urban neighborhoods for jobs in the IT sector in New England, New York City, and elsewhere. The year after the program took place, the treatment group reported earnings that were on average \$3,461 more (30 percent higher) than the control group due to higher hourly wages (Roder and Elliott 2011).

Several other efforts that provide occupational training plus work experience to students in key sectors have generated impressive estimated impacts in evaluation studies. Regarding a successful example of CTE in high school, a random assignment evaluation of the Career Academies has shown large impacts on the earnings of young men, especially those deemed at risk of dropping out of school, even eight years after random assignment.<sup>7</sup> The Academies focus on particular sectors of the economy, and combine high-quality general academic instruction with a more occupational kind, and provide critical work experience in those sectors to students. And, quite importantly, the Academies did not “track” students away from postsecondary education, because the postsecondary enrollment rates of these students were no lower than those of students in the control group.

Thus, we now have rigorous experimental evidence on highly cost-effective programs for in-school youth, out-of-school youth, and disadvantaged adults; all of these programs provide education or training that closely target good-paying employers or economic sectors, where outreach to and active engagement of employers is a major part of the training process. This evidence supports nonexperimental evidence on effective training programs that suggests, for instance, that apprenticeships have also generated large impacts on earnings in some evaluation studies, as have various state-level programs providing incumbent worker training (Hollenbeck 2008; Lerman 2010).

It is important to note that all of these relatively successful programs have been in operation for many years, and have developed strong curricula and links to the business community that might not be easily replicated in a short time period. Furthermore, they focus on workers that are disadvantaged, that have strong enough basic skills and

education credentials to successfully handle moderately technical training. These successes probably can be replicated in other settings over time, but only with appropriate screening of candidates and careful development of their occupational training curricula and ties to employers.

A few other education or employment programs in community colleges and low-income neighborhoods that have undergone evaluation (with varying degrees of rigor) also deserve mention. The strongest evidence, based on RCT research designs, shows positive effects on educational outcomes from the Opening Doors community college interventions, which include merit-based financial aid; the structuring of “learning communities” of students; and certain kinds of mandatory counseling on educational outcomes (Richburg-Hayes 2008). A study of community colleges, using nonexperimental evidence from a program in Washington State that integrates developmental (or remedial) education with occupational training, known as the Integrated Basic Education and Skills Training (I-BEST), shows positive effects on educational outcomes (Jenkins, Zeidenberg, and Kienzl 2009). And the Youth Opportunities program at the U.S. Department of Labor, which provided grants to thirty-six low-income communities to develop and coordinate local educational and employment services for youth, generates some positive impacts on both educational and employment outcomes in these sites (Decision Information Resources 2008). Thus, a range of studies has demonstrated the potential to improve educational outcomes at community colleges and to build systemic efforts to provide employment services.

**A rigorous body of evidence suggests that certain education and training efforts can be cost-effective for addressing these issues, even when brought to substantial scale.**

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## Chapter 3: The Proposal: Competitive Grants to Foster Education and Workforce Systems and Activities

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Given the strong recent evidence on the efficacy of job training that carefully involves employers and considers labor demand for disadvantaged populations, there is clearly some strong potential to raise the skills of workers. Raising those skills would allow some currently low-skilled workers to fill existing jobs and also would help create new employment opportunities if employers respond to a more productive set of workers by creating more good-paying jobs for them.

The goal of this proposal is to encourage the creation of more-effective education and workforce systems that include evidence-based training models and that are more responsive to employers who create good jobs. Given current and future budget constraints, any new public expenditure should be designed primarily to improve the efficiency of resources already in the system, but some important categories of services also would benefit from greater support. These expenditures should build on encouraging efforts that have been developed in several states (Center for Best Practices 2009), and leverage other existing sources of funding.

Accordingly, I propose that the federal government create and fund a new competitive grants program to support the building of education and workforce development systems aimed at filling good-paying jobs in key economic sectors. Grants would mostly go to the state-level partnerships, though some small number would also be provided at the federal level to partnerships in some key sectors, such as health care, which would support state-level efforts around the country in these sectors. Some might also go directly to regional efforts at the substate level, though the states would decide how to incorporate regions into their efforts.

The idea for such a competitive grant is not new. In fact, a somewhat similar idea has been embodied in legislation that has already passed the U.S. House of Representatives as a potential amendment to WIA and has also been proposed in the Senate. The Strengthening Employment Clusters to Organize Regional Success (SECTORS) Act of 2008, passed by voice vote in the House of Representatives that year, calls for grants of \$4 million to \$5 million to be made to industry or sector partnerships, although no new funding of services was provided. In the Senate, Senator Patty Murray (D-WA) has

recently proposed the Promoting Innovations to Twenty-First Century Careers Act, which embodies somewhat similar ideas for state and regional partnerships.

The proposal described here, however, would be much greater in scope, would be targeted toward states, and would provide new funding for services as well as just the organizational infrastructure of “partnerships.” In that way, it might be more like President Obama’s originally proposed American Graduation Initiative for grants to states and community colleges, which now receives just moderate funding under the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program.<sup>8</sup>

The grants would begin in the first several months as planning grants, but then would evolve into grants that fund both services and system building within two years of the program’s launch. Overall, the programs should be funded at the level of roughly \$2 billion per year for at least five years. Renewal of these grants would be allowed but would not be automatic, and would be conditional on evidence of outcomes and impacts achieved by the grantee. The grants would be administered jointly by the U.S. Departments of Education and Labor.

Grants would generally be awarded on the basis of the following mandatory criteria designed to model successful training programs:

- The inclusion of key partners including (i) community colleges and other education or training providers, (ii) industries or large employers with strong labor demand and good jobs, (iii) local workforce development agencies, and (iv) intermediary organizations with strong links to employers or industries
- The targeting of disadvantaged workers
- The responsiveness to labor market and employer needs
- The funding of key direct supports and services to students, workers, and employers, as identified below
- The extent to which other sources of public or private funding are leveraged, as part of efforts that will be sustainable over time

- The strength of the evidence on which the training and educational models are based
- The strength and rigor of evaluation plans

## INDUSTRY AND EMPLOYER PARTNERSHIPS

To begin, states would need to create new or strengthen existing partnerships between postsecondary education institutions (as well as high schools providing high-quality CTE), employers or their associations in key economic sectors, workforce agencies (i.e., state and local workforce investment boards), and perhaps other nonprofit institutions at the state or local levels that serve as intermediaries in these efforts. The evidence reviewed above suggests that the involvement of employers is critical and that the more successful programs use intermediaries that have long-term relationships with employers.

Key employer and industry partners would be drawn from sectors where jobs generate good pay and benefits per average level of education, and where employment growth is projected to be strong over time, using newly available administrative labor market data at the state and local levels.<sup>9</sup> Industry associations would be particularly important partners, since it is hard to build systemic efforts with individual employers. But impressive models in which particular employers have reached out to education providers to build “career pathways” for high school and college students could be replicated and brought to greater scale. For instance, IBM has recently helped build the Pathways in Technology Early College High School (P-TECH) program in Brooklyn, while Pacific Gas and Electric (PG&E) has started the PowerPathways skill development program in conjunction with local community colleges in California.

## TARGETED TRAINEES AND SECTORS

During the planning process, states would be required to more systematically identify underemployed groups of workers—including but not limited to disadvantaged youth and adults—who might benefit from new sectoral or “career pathway” models at different levels of skill. States also must identify the sectors where demand will likely remain strong and will likely generate good-paying firms and jobs. Intermediaries with strong ties to those employment sectors should also be included in the planning stage. These could include community-based nonprofits, associations of employers, and workforce development organizations, among others.

Of course, demand projections often have some degree of error, especially since labor demand can shift in directions that are not easily predicted from recent trends.<sup>10</sup> Therefore, state

plans should also indicate the extent to which the education and training provided are general and likely portable across specific sectors if such unanticipated demand shifts occur. The best plans will also include funding or technical assistance, or both, for employers who might need modest retraining either for newly hired or incumbent workers who do not exactly fit their current skill needs.<sup>11</sup> Thus, state plans should provide for occupation- and industry-specific training, as well as for mechanisms that generate flexible responses to unanticipated demand shifts.

## BROADER MEASURES TO SUPPORT EMPLOYMENT-BASED TRAINING

The grants would be used to encourage more responsiveness to the labor market at two- or four-year colleges. For instance, the grants could be used to expand high-quality CTE programs in high school and career counseling at colleges, and to encourage educational institutions to expand instructional capacity in high-demand areas, based on labor market data, where such capacity is often lacking. Indeed, states could be rewarded for tying their subsidies for community colleges to rates of certificate or degree completion, especially in sectors of strong demand. The integration of developmental or remedial education with occupational training could be encouraged, along with other proven efforts to reduce dropout rates.

Some funds would be available to pay for tax credits or technical assistance to good-paying employers that participate in sectoral training programs and other efforts to upgrade their incumbent workers. A model for this technical assistance might be the Manufacturing Extension Partnership program that helps manufacturers upgrade workplace performance and productivity. More broadly, states should indicate that their education and workforce systems are also part of broader economic development plans to assist industry development and employment growth, especially in geographic areas that are currently underserved (Bartik 2010; McGahey and Vey 2009).

## FUNDING DIRECT SERVICES FOR TRAINEES

Grants to states would then pay for some direct service provision that is not already available to Pell grantees and other lower- or middle-income postsecondary students. These services could include tuition payments for coursework leading to certification in the relevant fields, by both prospective and incumbent employees, who are not eligible for Pell Grants; stipends for paid work experience under apprenticeships, internships, and other forms of college work-study in these fields; and supportive services, such as child care for low-income parents.<sup>12</sup> Small federal programs that already provide

such funding, such as the Child Care Access Means Parents in School program or the Job Location and Development Program that provides off-campus paid work to students under the Federal Work Study program, could be effectively expanded and perhaps even incorporated into such efforts.

### PROMOTING SUSTAINABILITY THROUGH LEVERAGING OF OTHER EXISTING FUNDING SOURCES

States would only receive grant money if they provide better services to students and better incentives to institutions as part of lasting systemic plans to improve the matching of less-educated or disadvantaged workers with good jobs over time.

To encourage plans that will be more lasting, states would have to generate plans to sustain their efforts over time, using other public and private sources of funds.

The new program should leverage other recent and current funding efforts, especially if the states can indicate how they are building on the progress generated from those other efforts. For instance, in addition to the TAACCCT program the proposed fund could complement activities funded by the U.S. Department of Labor through recent competitive grant programs such as the High Growth and Emerging Industries Job Training Initiative, and the Workforce Innovations for Regional Economic Development grants to regions. It could also complement the efforts of several national foundations, such as the National Fund for Workforce Solutions, and others aimed at community colleges and states, to improve degree completion rates as well as career pathways to local labor markets. Examples of these initiatives include Achieving the Dream, Shifting Gears, and Breaking Through.<sup>13</sup> It would build on activities already begun in many states (Center for Best Practices 2009) to more closely link their education and workforce activities (including those funded by WIA) to economic development, and also on major new workforce initiatives such as the No Worker Left Behind program recently implemented in Michigan. That program provides training funds to displaced workers who were being trained in community colleges for jobs in industries where high future growth is expected.

Most importantly, the grants could encourage much better use of the enormous sums of federal money that the Obama administration recently invested in the Pell Grant program. They also could promote better use of very large state subsidies to public colleges by raising certificate or degree completion rates among grant recipients that are well matched to good jobs in the labor market. As such, this program would not duplicate other efforts, but would build on them. The grants would encourage states to combine currently disparate and uncoordinated funding efforts into more effective education

and workforce systems that are better matched to state and local labor market demand.

Proposed plans in grant applications should leverage private funding sources, also. Indeed, since employers would benefit to some extent from these programs, they should be willing to contribute some modest funding, perhaps through their industry associations or through dedicated funds from state payroll taxes.<sup>14</sup>

Implemented in this fashion, the program could generate the kinds of lasting systemic changes at the state level that apparently have been induced by other federal grant programs recently, such as the Race to the Top fund in K–12 education, or the expansions of unemployment insurance eligibility under the Unemployment Insurance Modernization Act provisions in the recent federal stimulus bill.

### EVIDENCE BASE AND EVALUATION

The criteria provided above are in part based on the evidence about what creates a successful training program, but the state plans should explicitly indicate the extent to which their proposals reflect evidence of cost-effectiveness based on rigorous research analysis, such as the best studies cited above.

The capacity to conduct rigorous evaluations of their own programs at both the institutional and state levels would be required for grant applicants to receive funding. Where specific programs are being set up or expanded, experimental evaluations based on RCT would be considered most appropriate. Alternatively, states could also generate nonexperimental evaluations using appropriate methods, either for specific programs and policies or for their overall efforts more broadly.<sup>15</sup> The ability of grant applicants to conduct evaluations should be evaluated by contractors selected by the Departments of Labor and Education. Renewal of these grants would at least partly depend on the extent to which evaluation evidence indicates success in expanding employment opportunities and earnings for the targeted groups.

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## Chapter 4: Expected Costs and Benefits

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**W**hat kinds of broader impacts might we expect from the kind of policy initiative described above? The potential impacts are hard to gauge, since our program would provide direct payments for limited amounts of new services while also heavily leveraging others that are already being made in large amounts (like Pell Grants and current state subsidies to community college students) to render them more effective. Any such estimates are quite speculative about the numbers served directly (by receiving services funded under the grants) or indirectly (by receiving services already funded that are now more effectively delivered), and about how many would be positively affected by the program.

Subject to these caveats, I have calculated the likely costs of the program and the benefits to the nation in higher earnings associated with this proposal, using two different approaches and some different assumptions within each. Table 3 presents the estimates associated with the first approach, which I regard as the stronger of the two (in terms of the evidence base for the calculations provided). Details of all of the calculations used to generate these estimates appear in the technical appendix to this paper.

Table 3 presents estimates of benefits from the program under different assumptions for rates of program completion and fade-out (the rate at which earning gains from the program decay over time). The estimates use the average cost of the training programs from SEIS described above, as well as estimated earnings gains generated there.

The first set of cost and benefit estimates focuses on the training services provided directly to workers. I assume that \$1.5 billion of the grant money is spent per year on direct services, at an average cost of \$6,000 per trainee, implying that up to 250,000 individuals might be directly served by this program in any given year. Thus, if the program lasts five years, as many as 1.25 million individuals could cumulatively receive services over the program period. In the case where gains fade out at 5 percent per year and 50 percent of participants complete the program (Column 1), the present value of total benefits for a year of such program would be \$5.75 billion, implying a benefit-to-cost ratio of 3.8 to 1. Even with the conservative assumptions of 20 percent fade-out and 50 percent completion, the benefits of the program still exceed the cost. Of course,

since these calculations assume no effects (either on costs or benefits) of other expenditures that might generate other services and reforms in how community colleges and local workforce systems operate, they are likely lower bounds to the true impacts of the program. Since we presume that changes in community colleges and other parts of the education and workforce systems in states would be much broader in scope, those served both directly and indirectly could number much higher than this estimate.

Alternatively, I also have made some calculations, described in the technical appendix, that assume we could increase the rate of credential attainment by 10 percentage points among either all community college students or among Pell Grant recipients, enabling them to at least earn labor market certificates that generate the kinds of impacts that were estimated in SEIS, although the average impacts are less than the impact of earning an associate's degree. I also assume that a competitive program of this magnitude could award grants to ten states of average size, covering up to one-fifth of the nation's postsecondary population, with a concentrated effect in community colleges.

A program of this magnitude, if successfully implemented over a number of years, could generate positive impacts in earnings that are very cost-beneficial. The estimates of total and net benefits from assuming higher rates of certification attainment among community college students or Pell Grant recipients, respectively, are larger than the estimates that use the cost of providing sectoral training directly. Using the baseline assumption of 5 percent fade-out and 50 percent completion, the present value of total benefits associated with a 10-percentage-point increase in certificate attainment would be more than \$11 billion in the case of community college students, and more than \$8 billion in the case of Pell Grant recipients; the benefit-to-cost ratios would be 5.7 to 1 and 4.1 to 1, respectively.

It is important to note that the benefits associated with these programs would likely accrue not only to private individuals and their employers, but also to the public sector at all levels (federal, state, and local). For instance, if the earnings of disadvantaged and displaced workers could be raised, that increase would likely raise income tax revenues at these levels.

In addition, the increase in employment and earnings of these workers would reduce poverty-related public expenditures over time that are associated with the high unemployment, high crime rates, and poor health of disadvantaged workers (Belfield and Levin, 2007; Holzer 2010; Holzer, Schanzenbach, Duncan, and Ludwig 2007). Specifically, successful efforts to raise employment and earnings for these low-skilled workers should reduce currently high expenditures in Medicaid, unemployment insurance, and the funding of criminal justice systems. By raising tax revenues and reducing public expenditures as described here, the new federal expenditures for these grants would be at least partly offset, and state budget deficits might be reduced.

Given the moderately high job vacancy rates that now exist as well as high unemployment rates, we would expect these efforts to reduce unemployment rates by enabling more workers to be

matched both to jobs that are now being created and to new ones that would follow. For instance, one can imagine that perhaps one-tenth of a percentage point of the unemployment rate could be eliminated per year by the higher credentials achieved by students and workers under this program, and up to one-half of a percentage point per year after five years.<sup>16</sup> If at least some grants are awarded within the first year, and because many of the certificates supported can be earned with training of fairly short duration, we should begin to observe positive impacts within two years of the program start date.

Thus, at least the potential exists for some quite small but effective expenditure of funds to have major impacts on the employment and earnings of the nation's disadvantaged workers, as well as on the productivity outcomes that underlie them.

TABLE 3

### Predicted Costs and Benefits of the Proposal

	5% Annual Fade-Out		10% Annual Fade-Out		20% Annual Fade-Out	
Program Completion Rate	50%	75%	50%	75%	50%	75%
<b>Benefit for Each Program Completer (Net Present Value)</b>	\$45,976	\$45,976	\$26,519	\$26,519	\$15,302	\$15,302
<b>Total Program Benefit (Net Present Value)</b>	\$5,746,971,760	\$8,620,457,639	\$3,314,823,012	\$4,972,234,518	\$1,912,729,969	\$2,869,094,954
<b>Annual Cost</b>	\$1,500,000,000	\$1,500,000,000	\$1,500,000,000	\$1,500,000,000	\$1,500,000,000	\$1,500,000,000
<b>Benefit-to-Cost Ratio</b>	<b>3.8</b>	<b>5.7</b>	<b>2.2</b>	<b>3.3</b>	<b>1.3</b>	<b>1.9</b>

Note: The training program is estimated to cost \$6,000 per participant. Assuming that \$1.5 billion will be used for sectoral training programs, the program can serve 250,000 participants. Source: Maguire et al. (2010) and author calculations.

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## Chapter 5: Questions and Concerns

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One of the first questions that might be asked about this proposal is the extent to which it overlaps with or duplicates efforts currently funded by WIA. That legislation funds state and regional Workforce Investment Boards, which in turn fund employment services at local One-Stop offices as well as limited amounts of job training. The workforce investment boards currently engage in some state and local planning, and sometimes cooperate with community colleges and other educational institutions in meeting local labor demand (Besharov and Cottingham 2011).

While there is some overlap between what now exists and what we propose, there are some key differences. For instance, the new grants would explicitly call for states and other grant applicants to build plans around targeting underserved populations for jobs in key economic sectors. They would fund many more services than are now generally allowable or available under WIA.<sup>17</sup> They would more actively and directly engage state and local higher education institutions, and would incent these and other institutions to be more responsive to trends in labor demand than they are now.

But it would also be important *that any new grant programs not be used to reduce formula funding right now for WIA*. Given the extent to which WIA funds have already been drastically cut over the past years and decades, and how tight those resources are for the cost-effective local employment services and training that they now fund, it is important that these new grants constitute a net addition of resources, and not further cannibalize important existing programs.<sup>17</sup>

Another question involves the extent to which the Departments of Education and Labor can jointly implement a grants program at the federal level as well as at the state and local levels. Some precedent exists for such efforts, such as the administration of funds to local areas under the School to Work Opportunities Act of the mid- to late 1990s. In addition, there are many recent examples of cooperation between the two departments, as well as between these departments and the Department of Health and Human Services. Cooperation between the Departments of Labor and Education also now occurs in other grant-funding efforts such as the TAACCCT program.

The grants program would also create new opportunities to connect previously unintegrated local systems run by separate organizations, and to build more comprehensive systems. Indeed, the new grants would create incentives for this collaboration to occur, and the program would award grants to states at least partly on the basis of the extent to which such systems are built. Renewal of the grants would also be an opportunity to judge which states have generated effective partnerships between workforce and education agencies on the ground.

As usual, one of the concerns about such a proposal would be the extent to which the program can replicate and scale up nationally smaller efforts that have been successful in the past. While this concern is valid, the fact that grants will be awarded competitively, and that there are strong models to be replicated that have themselves already achieved some significant scale, gives us greater confidence on this issue.

Another concern is *whether or not the more specific occupational or sectoral skills in which prospective workers are being trained will generate long-term labor market rewards for them*, especially after they leave the job in question. More broadly, one might also wonder whether the occupational training provided would be too narrow. In other words, should we invest significant resources in specific sectoral training, given the likelihood of unexpected shifts over time in the composition of labor demand in a very technologically dynamic world, or should we invest only in more general training?

While this concern is certainly valid, the extent of the potential problem can be limited in a number of ways. First, all students at community colleges should get some mix of more general skills as well as those that are more narrowly tailored to a particular occupation or sector; to the extent that workers move across jobs and sectors over time, at least some of the skills would be transferable, depending on how far from the original sector their mobility takes them. The same is true if labor demand shifts away from sectors where such demand is now strong and where such training is readily provided.

Second, a more effective education and workforce system should itself lead to more-effective employer adaptations to such shifts in demands for skills. If, for instance, employers need welders, but primarily welders of a different type than they currently find among prospective workers (as Louis Uchitelle suggested in the *New York Times* cited in endnote 5), a more effective workforce system should make it easier for employers to modestly retool their incumbent or prospective workers, which would limit the difficulties associated with specific skills training.

Another concern is whether the current fiscal environment will allow for even the kinds of modest new expenditures that I propose above. On the one hand, with proposals for large cuts in federal discretionary nondefense spending—and in particular for job training—now being generated, it might not be an auspicious time to propose increases. On the other hand, recent evidence suggests that expenditures in education are not quite as vulnerable to cuts at the federal level as are other discretionary expenditures; and those tied to job creation and employer needs might be less vulnerable to cuts if they enjoy some bipartisan support, especially from major employers and industry associations.

It might be possible to reallocate some of these funds from other employment and training funds.<sup>18</sup> One possible source of funding for new competitive grants is revenues from H-1B visa fees. H-1B visas are visas for immigrant workers with high skills. The federal government through the Department of Labor uses the revenues from these visas for training American workers.

If alternative funding is not available, the cost of the program might be scaled back initially and ramped up slowly as successes become more apparent and political support grows over time.

It is also important that assistance be targeted primarily on students and workers with the greatest need—in particular, disadvantaged youth and adults who are capable of being effectively trained and can handle more technical material when necessary, as well as displaced workers. Economic development efforts at the state level might be used to provide public assistance to employers or middle-class workers who want a “free ride” but who could afford to pay for the relevant education and training themselves. While these efforts may not reach the hardest-to-employ populations, such as those with the poorest numeracy and literacy skills and other barriers to work, they should be judged at least partly on their targeting of groups in need, as well as on the other criteria listed above.

Finally, we need to note the overall weakness of the U.S. job market, both in the short term and in the longer term. Insufficient aggregate demand and uncertainty seem to be limiting overall job creation and our recovery from the Great Recession, while new technologies and global forces might also slow job creation over the longer term (Blinder 2006; Freeman 2007; McKinsey Global Institute 2011). This proposal is not designed to address a broader set of problems that seem to be deterring employers from creating large numbers of jobs, as they did in the 1980s and 1990s.

The need for enhancements in worker skills and the quality of jobs created remains, however, and perhaps becomes even stronger in a tepid labor market. And the ability of these markets to absorb workers with higher skill levels and higher pay over the longer term should not be doubted, even when aggregate employment outcomes are disappointing.

**The need for enhancements in worker skills and the quality of jobs created remains, however, and perhaps becomes even stronger in a tepid labor market.**

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# Conclusion

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To raise employment levels and earnings in the United States, I propose a new set of grants to fund more-effective education and workforce systems at the state level that would be more supportive of firms that create good-paying jobs, perhaps encouraging them to create even more. The grants would fund partnerships of employers, training providers, and intermediaries at the state and local levels, and would fund a range of specific services and activities. Criteria have been laid out for the awarding of grants, including the extent to which they target underserved populations and growing sectors, the extent of services provided, the extent to which other sources of public and private funding are leveraged, and plans for rigorous evaluation of outcomes and impacts.

This proposal builds on a body of research that indicates the success and potential for further targeting training towards firms and sectors that create good-paying jobs. The proposal does not reinvent the wheel or duplicate existing programs, but is specifically designed to build on efforts that are already under way in many places.

If effectively designed and implemented, such a grants program could significantly improve the employment rates as well as the earnings of targeted groups over the next few years and beyond.

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# Technical Appendix

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The estimates in Table 3 assume that most of the grant money (i.e., \$1.5 billion out of \$2 billion) is spent directly on training services for individuals, and show the costs and benefits of this spending based on SEIS. Since these estimates include no impacts on costs or benefits associated with broader changes to the education and workforce systems of the relevant states, and since they use many conservative assumptions, the estimates should be regarded as lower bounds to the likely effects. For example, these estimates do not take into account the benefits to students from community college support services or reforms in the college financing or workforce development systems, which could provide significant spillovers to students and are much less expensive to provide on a per student basis.

The cost of the training program in Table 3 is assumed to be \$6,000 per participant, which is the average cost of the three programs in SEIS. For the \$1.5 billion spent on these services, 250,000 individuals could be served annually. We look at total benefits assuming that 75 percent of individuals finish the program, which is the completion rate in SEIS. We also provide a more conservative estimate, assuming that 50 percent of individuals served finish the program and receive a credential, well below the 75 percent completion rate of SEIS. We also assume that those who do not finish the program obtain no benefit from it.

We transform the second-year individual impact estimate reported for SEIS so that it only applies to program completers. The impact on annual earnings per program participant reported in SEIS is \$4,011.<sup>19</sup> This is an “intent-to-treat” estimate, based on all participants randomly assigned to receive services from the training program (treatment group) relative to those not receiving them (control group). This estimate thus applies to anyone offered treatment, even if she does not complete the program or earn the certification. To apply it only to program completers, we transform it into the “treatment on the treated” estimate of \$5,348 (i.e., 4,011 divided by 0.75, the program completion rate), which we now apply only to the smaller percentage of trainees that we expect will finish treatment in our broader program.

The other estimates in Chapter 4 use an alternative approach: instead of focusing on individuals who are trained, this approach estimates the total effects of systemic changes as reflected in higher credential completion rates. We assume that

the program will raise credential completion rates by 10 percent among community college students or Pell Grant recipients, respectively, in the states that win grants.

To predict the impact of larger changes to the community college system, we must estimate the numbers of individuals who might benefit from systemic changes rather than those receiving treatment directly. Nationally, the number of students who attended community college in 2010–2011 (12.4 million) or the total number of Pell Grant recipients in 2010–2011 (8.9 million) serve as the target populations. Assuming that ten states of average population size might receive grants, one-fifth of these relevant student populations (2.48 million community college attendees and 1.78 million Pell Grant recipients) could be affected by this competitive program. And, if 10 percent of these groups can gain additional certification through the job training programs, a total of 248,000 community college attendees or 178,000 Pell Grant recipients could acquire additional relevant job certification. Note that both estimates fall short or approximate the 250,000 individuals whom we assume to be directly serviced in the table, but with much higher completion rates here (as we assume that all of these individuals will gain new certifications). I apply the same treatment effect on the treated estimate of earnings gains (based on SEIS) to all such individuals in these examples as in the earlier one.

In all of these examples, I assume that spending outlays are realized at the beginning of the first year and that earnings gains for program completers are realized towards the end of that year (in Table 3) or at the start of the second year (i.e., after program completion).<sup>20</sup> The costs of forgone earnings (based on SEIS estimates) are also included in the first-year estimates in Table 3, but not in the estimates based on community college or Pell Grant populations, as the latter examples assume that students are already enrolled in college before the program is implemented and that there is no further loss of earnings.<sup>21</sup> Once the earnings gains appear, I assume that they decay over time at an annual rate of 5 percent in the baseline or 10 percent in alternative calculations until they disappear, and I discount future earnings using a real rate of 3 percent.<sup>22</sup>

The estimates presented here show the benefits and costs associated with expenditures for just one year. Assuming the program operates for each of five or ten years, one could simply multiply the listed costs and net benefits by five or ten to derive expected total impacts.

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# Endnotes

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1. Firms are often reluctant to pay for general skills training, since workers might not stay with the firm providing such training. In addition, wage rigidities, imperfect or asymmetric information about prospective workers, liquidity constraints, and other market “failures” might make firms reluctant to make such investments (Acemoglu and Pischke 1999; Becker 1975).
2. Specifically, the percentages of top-quintile jobs filled by top-quintile workers rose from 63.6 to 67.7 percent in just over a decade, while the percentages of second-quintile jobs filled by second-quintile workers rose from 34.1 to 38.6 percent. In contrast, the percentages of fourth-quintile jobs filled by workers in the bottom two quintiles of skills rose from 59.5 to 65.4 percent. Worker and job quality are measured by worker and firm “fixed effects,” respectively, and are calculated from matched longitudinal data on workers and their employers. See Holzer and colleagues (2011) for more detail.
3. Other data from Holzer and colleagues (2011; Table 2.5 of their book) show that manufacturing employed 27.6 and 24.4 percent of all workers in the top two quintiles of skills, respectively, in 1992, which declined to 24.8 and 18.4 percent, respectively, by 2003. But for workers in the bottom two quintiles of skills, these percentages declined much more dramatically, from 17.7 and 10.1 percent to 8.3 and 4.0 percent, respectively.
4. For evidence on the high variance in rewards to community college degrees and certificates for youth and dislocated adults workers, see Jacobson and Mokher (2009); and Jacobson, LaLonde, and Sullivan (2005), respectively.
5. In manufacturing, a job vacancy rate of 2.0 percent and a new hires rate of 2.0 percent in most recent JOLTS data from the Bureau of Labor Statistics (November 2011) implies an existing job vacancy for almost each new hire, which constitutes a much higher ratio of vacancies to hires than exists in any other broad industry group in these data. Elsby, Hobijn, and Sahin (2010) show evidence that the job vacancy rate associated with a given unemployment rate in the United States, known as the “Beveridge Curve,” has shifted out over the past several years. Louis Uchitelle in his June 23, 2009, *New York Times* article, “Despite Recession, Demand for Skilled Labor is High,” and Michael Fletcher in his February 2, 2011, *Washington Post* article, “Why Does Fresno Have Thousands of Job Openings—and High Unemployment?” provide journalistic evidence of small employers who have had difficulty finding skilled workers, even at the trough of the recent downturn.
6. This information was provided to me by Sheila Maguire, lead investigator on SEIS, in a private communication.
7. See Kemple (2008). Impacts for young men after eight years were still nearly \$2,000 per year for each participant.
8. Originally the American Graduation Initiative was to be funded at \$12 billion for ten years, with grants both to community colleges and states. Ultimately \$2 billion was authorized over four years through the TAACCCT program to community colleges only.
9. State and local data on employment changes and earnings by detailed industry are now available through the quarterly workforce indicators data of the Local Employment Dynamics program.
10. For instance, the explanatory power of Bureau of Labor Statistics projections relative to subsequent labor market trends has been challenged by Carnevale and colleagues (2010), who show that their own projections have stronger predictive power over time. Alternatively, some analysts (e.g., Bishop and Carter 1991) claim that the Bureau of Labor Statistics projections are systematically biased and tend to underpredict the growth in labor market demand for education over time.
11. For instance, in Uchitelle’s article about welders cited in endnote 5, many employers do not claim that they cannot find welders in general, but that they seek welders who have completed a particular type of welding training that might not be widely available at any point in time.
12. Low-income students may not be eligible for Pell Grants if they receive training from a provider that is not an accredited two- or four-year college.
13. The National Fund has been established by the Annie E. Casey, Ford, Hitachi, and other foundations. It now includes three hundred funders for sectoral training projects in twenty-four communities. The Achieving the Dream, Shifting Gears, and Breaking Through programs have been funded by the Gates, Lumina, Joyce and other foundations. None of these efforts has been rigorously evaluated to date.
14. These taxes have been used to fund incumbent worker training programs in a variety of states (Hollenbeck 2008).
15. For instance, states could propose to use difference-in-differences or regression discontinuity designs across institutions or regions that have implemented different kinds of specific policies and practices. Analysis at the state level could be performed, for instance, using interrupted time series methods.
16. This calculation assumes that up to 150,000 of those new earnings credentials created by the new program can fill job slots that are vacant at any point in time.
17. See Holzer (2009) for evidence that WIA has been cut by nearly 90 percent in real terms since 1980, while the scope of its services has expanded and while the workforce has grown by roughly half. O’Leary, Straits, and Wandner (2004) report that funding for employment and training services in the United States, as a percent of GDP, lags behind that of almost every other industrialized country. However, some uses of the workforce innovation funds currently being allocated in WIA might now be subsumed under the new grants program.
18. A recent report by the U.S. Government Accountability Office (GAO 2011) indicates several dozen small federal employment and training programs that overlap, to some extent, with WIA and might produce significant savings if carefully consolidated.
19. This was the average positive impact of three sectoral employment training programs analyzed in SEIS—the Jewish Vocational Service in Boston, Wisconsin Regional Training Program in Milwaukee, and Per Scholas in New York City.
20. The training in the SEIS programs lasted six months or less, and thus benefits began to accrue to trainees in the second half of the first year. In contrast, we assume that those in community college will need the full year to complete their programs or degrees.
21. Since these calculations focus on the existing college population, they also ignore disadvantaged or dislocated individuals who would benefit by new entrance to college or other training programs. This is one more very conservative assumption that I have made.
22. Some program evaluation studies, like that of the Job Corps or the Job Training Partnership Act, show significant fade-out over time of program impacts (Holzer 2009), while others do not (e.g., Heinrich et al. 2009). Assuming a 5 percent annual rate of decay is a reasonable compromise based on the findings of these studies.

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## Highlights

Harry Holzer of Georgetown University, the American Institutes for Research, and the Urban Institute proposes a new set of competitive grants to fund education, training, and career counseling initiatives that feature private sector partnerships in order to match less-skilled workers to good-paying jobs that do not require four-year degrees.

## The Proposal

**Encourage training providers and participants to invest in the most valuable classes and credentials.** Students in training programs and community colleges have limited time and money to use on training, and community colleges must choose a limited set of classes to offer. Since training in different subject areas offers varying benefits, it is important for funders, participants, and providers to focus training in the areas with the highest rewards.

**Leverage existing funds to create a more coherent workforce training system.** In the current system, community colleges are too infrequently linked with agencies that provide career guidance, and neither community colleges nor employment service providers are necessarily tied to the employers demanding skilled workers. Grants to promote partnerships between these groups could encourage more efficient use of existing funds.

**Base training programs on models that have been proven effective.** Evaluations based on randomized control trials of training programs have shown that programs are most effective when they include partnerships with employers in high-growth sectors and when they target their training toward relevant skills.

## Benefits

Direct funding for training programs can increase employment and earnings for less-skilled workers. The increased earnings for participants exceed the cost of training even under conservative assumptions, and the benefits may be two to four times the cost. Furthermore, the grants could enable and encourage existing training programs to adopt more-effective practices and ultimately make them more successful.



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