



# Expanding “Free College”: How to Build a Job Training Guarantee

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As the free college debate continues to gain momentum in states across the country, advocates’ and policymakers’ growing success in reframing access to college as a guaranteed benefit raises the question: Should federal or state governments do more to ensure that guarantee includes access to quality job training programs more generally, and if so, how?<sup>1</sup>

Attempts to quantify how severe the need remains for the kind of middle-skill jobs that require training post-high school vary, but studies generally point to a shortage in sub-bachelor degree credentials in *certain* fields and localities and, overall, an increase in wages for people with some college and associate’s degrees.<sup>2</sup> Moreover, the current workforce development system would almost certainly fail to reach scale or quickly respond should any of the more extreme predictions of job loss or job shifts come true as a result of automation or climate change.<sup>3</sup> At the same time, many of the big ideas floating around the national economic debate—from federal job guarantees,<sup>4</sup> to large public investments that create public sector jobs in target industries,<sup>5</sup> to a “public option” for employment in distressed communities<sup>6</sup>—focus on spurring demand where the private sector is failing to provide opportunities for work, but would also require a job training system that can supply

large numbers of workers with skills they may not currently possess.

Expanding free or affordable job training opportunities to all low-wage workers, unemployed people, and young people would not solve aggregate income inequality, but a well-designed, universally accessible training benefit would allow more workers to access higher-wage job opportunities, respond to unpredictable shifts in available jobs, support new public efforts to expand demand for workers such as large federal investments in infrastructure, and improve overall productivity.<sup>7</sup> Guaranteeing access to quality job training programs would offer a flexible framework to help address two related problems that are difficult to quantify and have proven historically challenging to solve: how many more sub-bachelor’s degree holders our economy needs in a changing economy, and how to provide equitable access to quality opportunities.

So how would we get there? What would it take to create and fund a universally accessible, quality, job training benefit? In addition to generating the political will for significantly increasing public funding for such an initiative, policy changes would have to address an unsolved tension across current federal job training efforts: how to expand

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job training options at scale while ensuring that the training programs being subsidized are worthwhile.

The free community college movement provides one pathway to providing free or affordable job training, but it would require a significant revamp to make it universally accessible. Its name suggests that it should already include in its promise the vast majority of our workforce development system that falls within traditional credit-bearing community college programs of minimum length that are resourced through funding streams such as Pell grants (of which \$7.6 billion are spent at community colleges),<sup>8</sup> state financial aid dollars, and state-level higher education operation dollars; that is, accredited certificate and associate's degree programs. But free community college proposals, as typically envisioned, fail to reach many part-time students and underrepresented students, and do little to cover unmanageable non-tuition costs, often only covering those tuition costs left over after the Pell grant. The limited scale and scope of state efforts in financing free community college, combined with lackluster and at times misdirected financing of other financial aid and of public community and technical college operations, often excludes or underfunds potential training recipients and limits colleges' ability to respond quickly to training needs.<sup>9</sup> "Free community college," therefore, would need significant expansion and reform to provide a true job training guarantee.

Outside of free community college programs, major federal funding streams subsidizing job training opportunities, such as the Workforce Investment and Opportunity Act (WIOA) and Trade Adjustment Assistance, have limited reach and limited funding: WIOA provides about \$3.5 billion for training and other supports directed toward adults, youth, and dislocated workers, and TAA just \$740 million.<sup>10</sup> Those programs offer benefits to training recipients who may use those dollars at a wider range of programs at community colleges or at private training providers. And while workforce training funds from the Temporary Assistance for Needy Families (TANF) program may actually eclipse WIOA training dollars, those dollars are often directed to general state financial aid and scholarship funds rather than specifically to job training programs.<sup>11</sup>

To guarantee training opportunities, one could increase the dollars dedicated to those job training opportunities, but it would need to be done in a way that alleviates an ongoing tension facing existing efforts: data show a significant return on an associate's degrees, bachelor's degrees, and some certificates, but evaluations of these training programs and data on some of the shorter certificate programs supported with these resources show mixed or inconclusive results.<sup>12</sup> And while particular certificate programs can outperform even some degree programs in terms of career outcomes, the positive impacts on wages of certificate programs are often more modest.<sup>13</sup> Moreover, when federal dollars become available for use at for-profit career education programs at scale and with few quality standards, some of these schools engage in predatory practices to go after those dollars.<sup>14</sup> Any effort to expand access to workforce training requires heightened attention to the success rate of training providers and an employer-driven quality check to ensure programs provide a reasonable return for students.

Providing young people, unemployed workers, and low-wage workers with guaranteed access to quality job training opportunities would better connect workers to in-demand good jobs, prepare for large-scale shifts in the kinds of jobs available due to technological changes, and support broader public efforts to reach full employment. To get there, policymakers could pursue two strategies, either together or separately. First, they could create a federal-state funding stream designed to incent states to restructure existing free college efforts, state financing of community college financial aid, and operations to expand access for more people pursuing an associate's degree or certificate. Second, they could scale access to higher-quality job training programs available through workforce development programs such as WIOA and TAA by taxing large companies to both fund benefits and motivate employer engagement in building quality programs while ensuring good value by capping the cost of participating programs and expanding requirements that programs provide measurable boosts in wages.

## The Role of Job Training in the Economy

Policymakers too often point to skill building as the fix to respond to any major shifts in the availability of good paying jobs, whether its resulting from trade policy, technological changes, corporate fiscal incentives, declining union density, or other causes. There is an increasing recognition that when those underlying economic shifts lead to job loss or wage reductions, more education can help—but the inequality resulting from these changes cannot be stymied by job training or skill building alone.<sup>15</sup> There remains, however, significant disagreement on the role that job training *should* play, and in particular, on how to measure the nation’s aggregate need for sub-bachelor’s degree recipients.

Economists identify a significant gap in post-high school training leading to a short-term certification, certificate, or associate’s degree that would fill middle-skill jobs (those requiring education beyond high school but less than a bachelor’s), with projections ranging from 33 percent of jobs<sup>16</sup> up to 48 percent of jobs through 2024 (compared to the 43 percent of workers currently trained at that level).<sup>17</sup> Others studies show that, while the demand for many middle-skill jobs is shrinking (particularly in clerical work and production), the demand for other “new” middle-skill jobs is growing—for example, in health care and sales—and the skill requirements for many those jobs map onto an associate’s degree or below.<sup>18</sup> And there is little doubt that increased skills lead to increases in productivity (though a smaller percentage of the gains from that growth in productivity go to workers than it once did).<sup>19</sup> Additionally, women and people of color have traditionally been excluded from higher return middle-skill jobs, and creating accessible pathways into those jobs through industry-recognized credentials can provide opportunities for this segment of the workforce.<sup>20</sup>

However, there is no universal agreement on these projections. Some analysts eschew the complaint that a shortage of skills is a major economic challenge<sup>21</sup> when compared to problems such as the paltry federal minimum wage, job and wage discrimination, and a lack of demand for workers—and point out that employers would be raising

wages faster to compete for workers if needed skills were so hard to find.<sup>22</sup> And recent research calls into question whether some of the skills demands are more reflective of the ability of employers to add unnecessary educational requirements when hiring during economic downturns: a recent report shows that the oversupply of job seekers during the Great Recession holds at least some (though not most) of the responsibility for the increase in skills demanded during that period.<sup>23</sup>

Some of this lack of consensus on the role of job training in the economy reflects significant nuance in demand for skills across geography and across industry. For example, the nation is currently experiencing the following trends:

- a technological shift in the kind of manufacturing opportunities<sup>24</sup> available in the Midwest that require different skills—though skills well within reach<sup>25</sup>—than traditional manufacturing jobs have demanded in the past;
- an across-the-board demand in certain job categories, such as plumbing, where “postsecondary training” typically means participating in a registered apprenticeship program;<sup>26</sup>
- a significant increase in the need for quality caregiving, as over one-quarter of all adults will be over the age of 65 by 2030;<sup>27</sup> and
- a staggering range in the excess supply/demand in registered nurses by state, from an aggregate shortage in California of 44,500 FTEs, to an aggregate excess in Florida of almost 54,000 FTEs.<sup>28</sup>

To add complexity to this analysis, the projected employment and wage outcomes of sub-associate degrees (some funded through major federal investments such as Pell grants, others not) is mixed. Some non-degree programs provide economic returns that outstrip associate’s degrees; others show no return at all,<sup>29</sup> and in fact, after educational costs are factored in, might provide negative returns and leave individuals with unmanageable debt to boot.<sup>30</sup>

While the poor outcomes from some pathways may be in part due to a lack of demand for certain credentials being offered, it is hard to separate that potential cause from a quality problem—that is, whether the training being provided would have produced a boost in wages had the instruction been better, and other supports more robust.<sup>31</sup> Evaluations of the impact of Trade Adjustment Assistance (TAA) retraining efforts (primarily used at sub-bachelor’s degree programs, both at community colleges and private providers) are also mixed, which may again be a result of quality training programs, the difficulty in determining the need for such middle-skill jobs (workers unsurprisingly had far better wage outcomes when they found work in their field of study), the financial hurdles workers face when they stay out of the workforce in order to pursue training, and the strength of the local labor market at the time.<sup>32</sup> Research into for-profit colleges providing certificates shows a *negative* return on investment.<sup>33</sup> Many predatory for-profit colleges leave students, and students of color in particular, with high debt loads and little value.<sup>34</sup> And while institutions of higher education have upped their efforts to provide sub-associate’s degree options significantly in the past decade, employers do not always understand the credential or certificate being offered and how it relates to their skills needs.<sup>35</sup>

Job training has been called on as a cure for many of our economic problems—such as the growing concentration of wealth at the top, unfair pay at the bottom, and a deficient demand for labor in certain regions—that in reality require a broader set of interventions. But when done well, accessible job training opportunities can bring wages up for some low-wage earners in conjunction with what other job quality protections (such as minimum wage laws) can provide. This is particularly true in geographic regions or industrial sectors where structural unemployment—unemployment due to fundamental changes in the economy rather than cyclical, short-term changes in supply and demand—is a major cause of poor job opportunities.

Creating the clear pathways to training programs discussed in this report can also be a key component of broader efforts to open up access to middle-skill occupations that have historically excluded women and people of color, such as

construction and manufacturing.<sup>36</sup> It can also be a tool to help combat fast-moving, unpredictable job losses that may occur due to major technological shifts, such as the increased utilization of AI and other structural economic changes like climate change and globalization.

Finally, a well-designed, universally accessible training benefit can support other economic interventions, such as large infrastructure investments or a job guarantee, that would ultimately rely extensively on training unemployed or underemployed workers looking to take advantage of new opportunities. For example, the jobs guarantee proposed by Mark Paul, William Darity, Jr., and Darrick Hamilton in a report for the Center on Budget and Policy Priorities would create jobs in areas of needed investment, such as caregiving, infrastructure, and energy efficiency retrofitting<sup>37</sup>—jobs that may require new skills. And providing such training alongside those initiatives would help combat some of the challenges facing public jobs programs, which struggle to increase employment for participants after they leave the program.<sup>38</sup>

Predicting precisely the future demand for job training—particularly the scale and type of job training needed—is difficult, and ensuring the quality of the programs offered is and will remain a challenge. Our job training delivery system must be both large enough and accessible enough to respond to rapid changes in demand for skills, and targeted enough to provide the particular skills needed in growing fields. Below, this report presents two distinct strategies to create guaranteed access to job training opportunities that do just that.

## Strategy 1: Create a Guaranteed Job Training Benefit through Debt-Free Community College

There are just under 6.5 million students enrolled in two-year-or-less postsecondary programs at any given time,<sup>39</sup> and as many as 12 million students enroll over the course of a year.<sup>40</sup> Expanding access to and improving community college programs provides the most immediate path to a wide-scale quality training guarantee.

However, while the financing policies put forth under the umbrella of “free community college” imply access to a guaranteed, universal benefit, the reality is far different, for two reasons. First, while at least twenty states have some version of a free college guarantee,<sup>41</sup> eleven of those states limit that guarantee to recent high school graduates, and twelve require students to attend full time. This means that students who must work to pay for school and other life needs (rent, family expenses), or who are already out in the workforce and trying to boost their skills through part-time enrollment, often cannot access these benefits. These limits reduce the budgetary costs of the programs, but narrow the opportunity from a universal guarantee to a program with limited eligibility to more “traditional” students. As a result, it is common for these programs to reach less than 5 to 10 percent of current college students in the state, and far fewer *potential* training recipients.<sup>42</sup>

Second, these programs often function as a “last dollar” tuition supplement,<sup>43</sup> meaning they only cover tuition costs after other grant programs are applied, and do not cover non-tuition costs for low-income young people who cannot rely on family support, or working adults who lose earnings when they go back to school. (Note that in this way, they differ from TAA’s Trade Readjustment Allowance, which provides weekly income support when recipients are enrolled in a training program.)<sup>44</sup> Without similar support, a working adult may be unable to forgo weekly wages to take on more hours in school, or pay additional costs such as books or transportation: non-tuition costs are about twice as much as tuition costs at community colleges.<sup>45</sup> Almost 40 percent of students at public two-year institutions receive a Pell grant averaging about \$3,000,<sup>46</sup> and many of free college programs simply cover the balance of tuition leftover after applying the Pell grant. Many low-income students, then, receive very little benefit from the free college program, creating an inequitable distribution of resources. To be truly effective, these programs must provide low-income students and adult learners enrolling in or returning to school some living support—otherwise, for many, it’s access in name only.<sup>47</sup> Expanding beyond “free tuition” to a “debt-free” framework, where low-income students do not have to

borrow or work unmanageable hours to attend school, is a critical component to reforming these programs.

These shortcomings in free college programs follow a similar trend found in other state higher education financing decisions. Many state financial aid programs, for example, exclude community college vocational programs or part-time students, and often do little to cover non-tuition costs. While federal Pell grants are available for programs as short as four months, states often limit eligibility for their state financial aid program to exclude those certificate programs or part-time students.<sup>48</sup> Recommended reforms that would expand state aid funding (both grant and institutional aid) in California, for example, to cover non-tuition costs and older students, would fill a gap in the amount of non-tuition aid going to community college students vis-a-vis four year programs.<sup>49</sup>

And states also underfund not just the aid available, but also the operations of community colleges as compared to public research institutions—even when accounting for the research functions of four-year institutions—meaning that community colleges have more limited resources to build new programs (particularly vocational programs that may be more expensive due to capital equipment costs and class size),<sup>50</sup> support nontraditional learners, and respond quickly to local economic changes.<sup>51</sup> In other words, states can make progress in changing the focus of their state funding and the eligibility requirements for their state financial aid. Programs like the CUNY ASAP program, which provides significant financial resources for tuition, books, and transportation—and funds the advising and academic supports alongside it—have demonstrated enormous impact on the success rate of students pursuing their associate’s degree.<sup>52</sup> But a true guarantee that brings that kind of program to scale would also require a deep investment on a scale that would require federal support that is more expansive, and likely structured differently, than the current Pell grant program.

Finally, current eligibility for state financial aid also raises a more complex challenge: most state financial aid supporting community college programs is generally limited to accredited programs of a minimum length.<sup>53</sup> Six

states and Washington, D.C. have their own noncredit job training programs with standards that differ from federal aid standards, though these programs are often small.<sup>54</sup> For example, Virginia’s New Economy Workforce Grant, which may be used for non-credit training programs at certain programs and for certain high-demand occupations, requires students to pay one-third of the cost of their training program—and up to two-thirds if they do not complete.<sup>55</sup> The institution receives payment for the final third from the state, if the student graduates. Most other state programs put their training dollars that go to non-accredited programs primarily at community and technical colleges. These programs are worth potentially incorporating into free community college public programs, but only if the impact on wages for recipients is positive—a caveat not always adequately considered in some federal proposals to expand out federal aid to such programs.<sup>56</sup> Alternatively, states could consider incorporating short-term, non-credit programs that receive significant subsidization from employers while the state waits for longer term outcomes data. Allowing for a ground-up approach through careful state-level inclusion into free college state programs would controlled expansion of nontraditional training options.

A meaningful job training benefit provided through the existing free community college movement would need to:

- restructure free college programs to end the exclusion of part-time and adult students;
- provide support for non-tuition costs for those with financial need, focusing more on providing a “debt-free” benefit;
- include a focus on community college operational support to ensure schools have the resources to invest quickly in new programs as skills demand shifts;
- create a generous federal–state partnership to incent and fast-track such a restructure, providing a good enough deal that states would opt-in; and

- create meaningful standards for wage impact of shorter, non-credit, state-funded community college programs—or require short-term employer subsidization—in order to include in existing state aid programs.

## Strategy 2: Scale a Job Training Benefit through WIOA or TAA by Expanding Employer Engagement and Financing

Two major federal workforce development programs, WIOA, and TAA, could provide a pathway to scaling job training opportunities. But their current limited funding levels mean that they fail to reach scale. Moreover, evidence tells us that effective short-term or rapidly developed job training programs require (1) tight guardrails to keep out poor performing providers, and (2) intensive employer engagement to provide value to workers. Those requirements create tension with efforts to scale job training opportunities within the WIOA or TAA structures.

First, given the limited reach of these programs, providing a guaranteed benefit through these structures would require new federal dollars to cover more participants, account for total program cost, and, in the case of WIOA, help low-income participants with other living costs.

WIOA provides training grants of up to about \$7,500 to about 100,000 people each year,<sup>57</sup> and in order to receive WIOA retraining funds, a worker must be unable to find a job, and yet have the skills such that they would benefit from the program. For TAA, anyone whose job was lost due to trade may be eligible for grants averaging about \$13,000,<sup>58</sup> though TAA retraining services reached just 23,000 people in fiscal year 2017.<sup>59</sup> TAA also provides non-tuition support for out-of-work individuals who have used up their Unemployment Insurance; WIOA does not. New dollars would be needed for both of these programs if they are to respond to even low-end projected need for postsecondary training, to cover training costs for more participants. Furthermore, there would need to be either an expansion of WIOA benefits for

non-tuition costs, or a reform to unemployment insurance to provide support for jobseekers, such as the Jobseekers Allowance proposed by several think tanks, if the program is to support low wage and unemployed workers looking to take advantage of WIOA training opportunities.<sup>60</sup>

Second, if a significant increase in federal dollars were on the table to expand these programs without some form of increased quality control, the likelihood that low-quality for-profit private providers would participate and pocket taxpayer dollars for shoddy training would increase. The on-and-off spigot of federal Higher Education Act dollars going to for-profit educators, for example, has led to a “boom-and-bust” cycle of training programs, leaving little return on those investments and millions of students laden with unmanageable debt.<sup>61</sup> These poor quality programs disproportionately harm students of color.<sup>62</sup> In addition, given the limited data available on the return on investment at shorter-term programs, which are currently eligible for WIOA and TAA dollars, tightening gatekeeping for eligible providers, combined with expanded outcomes requirements, would be critical for any scaled job training benefit.<sup>63</sup>

Currently, the quality controls vary across these funding streams. WIOA requires that individuals spend training funds provided through Individual Training Accounts at “eligible training providers.”<sup>64</sup> States vary as to how much oversight effort they put into their Eligible Training Provider list; some states have strong outcomes assessments, while others look at inputs such as instructor qualifications and rely on state staff to drive participants to successful programs.<sup>65</sup> Similarly, eligible providers under TAA must be approved by an appointed agency in a state, and could be a community college, vocational education center, private company, GED program, or other. TAA requires no statutory baseline for performance measures, although it does require reporting on outcomes.<sup>66</sup>

Policymakers interested in scaling these funding sources as a basis for guaranteeing access should incorporate a number of quality control measures. First, training providers should, at least, be expected to show a reasonable return for the investment in their programs: a majority of participants

should earn more than high school graduates. Second, private training providers should also be able to justify their price: if a private training provider wishes to charge more than a community college charges for a similar program and also receive federal dollars, for example, they should only be able to do so if they are operating an employer partnership where the employer is paying for at least half of the cost; an employer willing to pay for an above-cost program is a strong indicator that needed training is unavailable at lower-cost providers. That protection, combined with basic outcomes requirements such as minimum earnings thresholds, will help keep down program price, and keep out predatory actors looking to pocket federal dollars at all costs.<sup>67</sup> Current WIOA and TAA requirements fall short of these needs.

Finally, eliminating low-quality providers is not enough: many job training opportunities currently available through the WIOA and TAA funding streams simply do not provide enough value to justify the cost.<sup>68</sup> Job training programs that work best rely on deep participation from businesses in identifying growing fields, designing curricula, and providing clear pathways into job opportunities,<sup>69</sup> particularly for workers who could most benefit from training opportunities.<sup>70</sup> This makes sense, as employers themselves provide the bulk of job training in this country<sup>71</sup> (though that training is heavily skewed to high-wage workers),<sup>72</sup> and are more likely to know what they need. In several cases, evaluations have found positive returns on “sectoral partnerships,” funded in part by WIOA dollars,<sup>73</sup> that respond to real demand in the market from employers in a locality and across a specific sector.<sup>74</sup> There is also strong evidence that integrated career pathway programs that combine basic education, social services, and skills-related training to help workers advance over time in a given sector provide better outcomes to low-wage workers.<sup>75</sup> Currently, most of these programs are small.

Having employers put more skin in the game by expanding their role in crafting training opportunities, particularly through sectoral partnerships, will improve the quality of the programs, and, given that employers ultimately benefit from trained workers, it is fair that they should help subsidize the cost of expanding public job training programs. This model is being used both here and abroad—in England,



policymakers recently instituted a levy on businesses with revenue over a certain size, and they have to pay the tax, or use the money to train their own apprentices<sup>76</sup>—and several states have adopted it as well. In New Jersey, a payroll tax from employers and employees funds state workforce efforts, though funding is not limited to training.<sup>77</sup> And in Washington state, the legislature just passed a bill funding both tuition-free college for students under \$50,000 and the operations of community college programs in high demand fields through a tax on businesses in sectors that rely on educated workers.<sup>78</sup>

A similar federal financing mechanism—a tax on employers of a certain size—could help offset the cost of scaling job training, while providing employers with an incentive to come to the table locally to design quality programs, protect those investments from poor quality programs, and participate in sectoral partnerships. Employers could even qualify for lower tax liability through participation in those partnerships.

In order to use existing workforce development programs to provide a guaranteed job training benefit, reforms would need to:

- increase dollars available to expand participation, but limit dollars to training programs that show clear positive outcomes;
- benchmark costs of eligible programs to community college tuition or to the willingness of employers to jointly subsidize the cost; and
- create new funding sources and a quality check through an employer tax that generates new dollars and incentivizes employer participation in program creation.

## Conclusion

Providing “free college for job training”—or guaranteeing meaningful access to job training opportunities—may not require an entirely new program or effort. It could build on the free community college movement or expand

upon traditional workforce programs such as WIOA and TAA. However, providing such a guarantee requires a restructuring—likely incentivized through new federal dollars—of current eligibility requirements; new, flexible funding to cover tuition and non-tuition costs for low-income young people, low-wage workers, and unemployed adults; and robust quality controls that implicate a new employer role to ensure training programs provide value.

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## Notes

<sup>1</sup> Critics often peg “free college” as wholly distinct from “free job training” efforts. See, for example, Anne Kim, “Forget ‘free college.’ How about ‘free credentials?’” Progressive Policy Institute, October 2017, [https://www.progressivepolicy.org/wp-content/uploads/2017/10/PPL\\_FreeCredentials\\_2017.pdf](https://www.progressivepolicy.org/wp-content/uploads/2017/10/PPL_FreeCredentials_2017.pdf). In reality, our system of higher education incorporates much of our workforce development system—but can do so more seamlessly and effectively.

<sup>2</sup> Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, “Recovery: Job Growth and Education Requirements through 2020,” Georgetown Public Policy Institute, November 2014, [https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.ES\\_Web\\_.pdf](https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.ES_Web_.pdf); “United States’ Forgotten Middle,” National Skills Coalition, 2017, <https://www.nationalskillscoalition.org/resources/publications/2017-middle-skills-fact-sheets/file/United-States-MiddleSkills.pdf>; Harry Holzer, “Job Market Polarization and US Worker Skills: A Tale of Two Middles,” Economics Studies, Brookings, April 2015, [https://www.brookings.edu/wp-content/uploads/2016/06/polarization\\_jobs\\_policy\\_holzer.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/polarization_jobs_policy_holzer.pdf); Brad Hershbein, Melissa S. Kearney, and Lawrence H. Summers, “Increasing Education: What It Will and Will Not Do for Earnings and Earnings Inequality,” March 2015, [http://www.hamiltonproject.org/assets/legacy/files/downloads\\_and\\_links/impact\\_of\\_education\\_inequality\\_hershbein\\_ Kearney\\_summers.pdf](http://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/impact_of_education_inequality_hershbein_ Kearney_summers.pdf).

<sup>3</sup> James Manyika, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, and Parul Batra, Ryan Ko, Saurabh Sanghvi, “Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation,” McKinsey Global Institute, December 2017, <https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Future%20of%20Organizations/What%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/MGI-Jobs-Lost-Jobs-Gained-Report-December-6-2017.ashx>; Daniel Aaronson and Brian J. Phelan, “Wage Shocks and the Technological Substitution of Low-Wage Jobs,” Federal Reserve Bank of Chicago, March 2017, <https://www.chicagofed.org/publications/working-papers/2017/wp2017-03>.

- 4 Mark Paul, William Darity, Jr., and Darrick Hamilton, “The Federal Job Guarantee—A Policy to Achieve Permanent Full Employment,” Center on Budget and Policy Priorities, March 2018, <https://www.cbpp.org/research/full-employment/the-federal-job-guarantee-a-policy-to-achieve-permanent-full-employment>.
- 5 Josh Bivens, “Recommendations for creating jobs and economic security in the U.S.,” Economic Policy Institute, March 2017, <https://www.epi.org/publication/creating-jobs-and-economic-security/>.
- 6 Ibid.
- 7 Angela Hanks and David Madland, “Better Training and Better Jobs,” Center for American Progress, February 2018, <https://www.americanprogress.org/issues/economy/reports/2018/02/22/447115/better-training-better-jobs/>.
- Note: There is evidence that job training can lead to higher overall productivity and higher wages, though as researchers at CAP argue, that strategy alone will not necessarily then lead to wage increases.
- 8 U.S. Department of Education, “Distribution of Federal Pell Grant Program Funds by Institution,” 2016–17, <https://www2.ed.gov/finaid/prof/resources/data/pell-institution.html>.
- 9 Jen Mishory, “The Future of Statewide College Promise Programs,” The Century Foundation, March 2018, <https://tcf.org/content/report/future-statewide-college-promise-programs/>.
- 10 “FY 2020 Department of Labor Budget in Brief,” U.S. Department of Labor, <https://www.doleta.gov/budget/docs/FY2020BIB.pdf>; “America’s Workforce: We Can’t Compete If We Cut,” National Skills Coalition, <https://www.nationalskillscoalition.org/resources/publications/file/Americas-workforce-We-cant-compete-if-we-cut-1.pdf>.
- 11 Temporary Assistance for Needy Families provides a significant amount of funding to training and education, but there are few parameters around those dollars and they often go to general subsidization of higher education programs. “How States Have Spent Funds Under the TANF Block Grant,” Center on Budget and Policy Priorities, February 19, 2019, <https://www.cbpp.org/research/family-income-support/state-fact-sheets-how-states-have-spent-funds-under-the-tanf-block>.
- 12 Sara Dolfin and Peter Z. Schochet, “The Benefits and Costs of the Trade Adjustment Assistance (TAA) Program Under the 2002 Amendments,” December 2012, <https://www.mathematica-mpr.com/our-publications-and-findings/projects/wia-gold-standard-evaluationhttps://ccrc.tc.columbia.edu/publications/labor-market-returns-sub-baccalaureate-college-review.html>.
- Bryan Wilson, “Understanding the New Evaluation of WIA: It Doesn’t Say What You Might Think It Says,” January 2019, <https://nationalskillscoalition.org/news/blog/understanding-the-new-evaluation-of-wia-it-doesnt-say-what-you-might-think-it-says>.
- 13 Di Xu, “What about Certificates? Evidence on the Labor Market Returns to Non-Degree Community College Awards in Two States,” CAPSEE, November 2014, <https://ccrc.tc.columbia.edu/media/k2/attachments/what-about-certificates-returns-to-non-degree-awards.pdf>.
- 14 Robert Shireman, “The For-Profit College Story: Scandal, Regulate, Forget, Repeat,” The Century Foundation, January 2017, <https://tcf.org/content/report/profit-college-story-scandal-regulate-forget-repeat/>.
- 15 Brad Hershbein, Melissa S. Kearney, and Lawrence H. Summers, “Increasing Education: What It Will and Will Not Do for Earnings and Earnings Inequality,” March 2015, [http://www.hamiltonproject.org/assets/legacy/files/downloads\\_and\\_links/impact\\_of\\_edu\\_earnings\\_inequality\\_hershbein\\_ Kearney\\_summers.pdf](http://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/impact_of_edu_earnings_inequality_hershbein_ Kearney_summers.pdf).
- 16 Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, “Recovery: Job Growth and Education Requirements through 2020,” Georgetown Public Policy Institute, November 2014, [https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.ES\\_Web.pdf](https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.ES_Web.pdf).
- 17 “United States’ Forgotten Middle,” National Skills Coalition, 2017, <https://www.nationalskillscoalition.org/resources/publications/2017-middle-skills-fact-sheets/file/United-States-MiddleSkills.pdf>.
- 18 Harry Holzer, “Job Market Polarization and US Worker Skills: A Tale of Two Middles,” Economics Studies, Brookings, April 2015, [https://www.brookings.edu/wp-content/uploads/2016/06/polarization\\_jobs\\_policy\\_holzer.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/polarization_jobs_policy_holzer.pdf). Paul Osterman and Andrew Weaver, “Why Claims of Skills Shortages in Manufacturing are Overblown,” Economic Policy Institute, March 2014, <https://www.epi.org/publication/claims-skills-shortages-manufacturing-overblown/>.
- 19 Jared Bernstein, “Productivity and Wages: What’s the Connection?” The Washington Post, August 2018, [https://www.washingtonpost.com/news/posteverything/wp/2018/08/14/productivity-and-wages-whats-the-connection/?noredirect-on&utm\\_term=.2261d4a7d74f](https://www.washingtonpost.com/news/posteverything/wp/2018/08/14/productivity-and-wages-whats-the-connection/?noredirect-on&utm_term=.2261d4a7d74f).
- 20 “Pathways to Equity: Narrowing the Wage Gap by Improving Women’s Access to Good Middle-Skill Jobs—Executive Summary,” Institute for Women’s Policy Research, March 2016, <http://womenandgoodjobs.org/wp-content/uploads/2016/03/Pathways-to-Equity-executive-summary-FINAL.pdf>; Deborah Kobes, “For Registered Apprenticeship to be the gold standard workforce program, it’s time to address equity,” JFF, November 2017, <https://www.jff.org/points-of-view/registered-apprenticeship-be-gold-standard-workforce-program-its-time-address-equity/>.
- 21 Heidi Hierholz, “Is There Really a Shortage of Skilled Workers?” Economic Policy Institute, January 2014, <https://www.epi.org/publication/shortage-skilled-workers/>.
- 22 Ibid.
- 23 Daniel Shoag, A. S. Modestino, and J. Ballance, “Upskilling: Do Employers Demand Greater Skill When Workers are Plentiful?” Review of Economics and Statistics, June 2017, <https://scholar.harvard.edu/shoag/publications/upskilling-do-employers-demand-greater-skill-when-workers-are-plentiful>. Others make the argument that if there were a deep skills gap across the board, employers would be raising wages at a quicker rate to compete for those workers who do have the skills. Instead, growth in the college wage premium has slowed. Elise Gould, “Looking at the Latest Wage Data by Education Level,” Economic Policy Institute, September 2016, <https://www.epi.org/blog/looking-at-the-latest-wage-data-by-education-level/>.
- 24 Andrew Stettner and Joel Yudken, “A Federal Agenda for Revitalizing America’s Manufacturing Communities,” The Century Foundation, September 2018, <https://tcf.org/content/report/federal-agenda-revitalizing-americas-manufacturing-communities/>.
- 25 Paul Osterman and Andrew Weaver, “Why Claims of Skills Shortages in Manufacturing Are Overblown,” Economic Policy Institute, March 2014, <https://www.epi.org/publication/claims-skills-shortages-manufacturing-overblown/>.
- 26 Plumber, Pipefitters, and Steamfitters, Occupational Outlook Handbook, Bureau of Labor Statistics, <https://www.bls.gov/ooh/construction-and-extraction/plumbers-pipefitters-and-steamfitters.htm>.
- 27 Nina Dastur, Indivar Dutta-Gupta, Laura Tatum, Peter Edelman, Kali Grant, and Casey Goldvale, “Building the Caring Economy: Workforce Investments to Expand Access to Affordable, High-Quality Early and Long-Term Care,” Economics Security and Opportunity Initiative, Georgetown Center on Poverty and Inequality, May 2017, [http://www.georgetownpoverty.org/wp-content/uploads/2017/05/Building-the-caring-economy\\_hi-res.pdf](http://www.georgetownpoverty.org/wp-content/uploads/2017/05/Building-the-caring-economy_hi-res.pdf).
- 28 “Supply and Demand Projections of the Nursing Workforce: 2014–2030,” U.S. Department of Health and Human Services, Human Resources and Services Administration, July 2017, [https://bhw.hrsa.gov/sites/default/files/bhw/nchw/projections/NCHWA\\_HRSA\\_Nursing\\_Report.pdf](https://bhw.hrsa.gov/sites/default/files/bhw/nchw/projections/NCHWA_HRSA_Nursing_Report.pdf).
- 29 Michael Itzkowitz, “The State of American Higher Education Outcomes,” Third Way, July 2017, <https://www.thirdway.org/report/the-state-of-american-higher-education-outcomes>.
- 30 Stephanie R. Cellini and Latika Chaudhary, “The Labor Market Returns to a For-Profit College Education,” The National Bureau of Economic Research, April 2014, <https://www.nber.org/papers/w18343>.
- 31 Di Xu, “What about Certificates? Evidence on the Labor Market Returns to Non-Degree Community College Awards in Two States,” CAPSEE, November 2014, <https://ccrc.tc.columbia.edu/media/k2/attachments/what-about-certificates-returns-to-non-degree-awards.pdf>.
- 32 Jillian Berk, “Understanding the Employment Outcomes of Trainees in the Trade Adjustment Assistance Program Under the 2002 Amendments,” December 2012, [https://wdr.doleta.gov/research/FullText\\_Documents/ETAOP\\_2013\\_11.pdf](https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2013_11.pdf).
- 33 Stephanie R. Cellini and Nicholas Turner, “Gainfully Employed? Assessing the Employment and Earnings of For-Profit College Students Using Administrative Data,” NBER Working Paper Series, January 2018, <https://www.nber.org/papers/w22287.pdf>.
- 34 The Institute for College Access and Success, February 19, 2019, [https://ticas.org/sites/default/files/pub\\_files/ticas\\_response\\_to\\_senate\\_letter\\_final\\_2-15-19.pdf](https://ticas.org/sites/default/files/pub_files/ticas_response_to_senate_letter_final_2-15-19.pdf).
- 35 Veronica Buckwalter, “Four Ways to Increase the Value of Short-Term Credentials: A Guide for Community Colleges,” JFF, December 2017, <https://www.jff.org/resources/four-ways-increase-value-short-term-credentials-guide-community-colleges/>.
- 36 See e.g. Teresa Cordova, Andrew Stettner, and Matthew Wilson, “Revitalizing Manufacturing and Expanding Opportunities for Chicago’s Black and Latino Communities,” June 2018, <https://tcf.org/content/report/revitalizing-manufacturing-expanding-opportunities-chicagos-black-latino-communities/>.
- 37 Mark Paul, William Darity, Jr., and Darrick Hamilton, “The Federal Job Guarantee—A Policy to Achieve Permanent Full Employment,” Center on Budget and Policy Priorities, March 2018, <https://www.cbpp.org/research/full-employment/>

the-federal-job-guarantee-a-policy-to-achieve-permanent-full-employment.

38 David Card, Jochen Kluge, and Andrea Weber, "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations," Discussion Paper Series, IZA, July 2015, <http://ftp.iza.org/dp9236.pdf>.

39 Scott A. Ginder, Janice E. Kelly-Reid, and Farrah B. Mann, "Enrollment and Employees in Postsecondary Institutions, Fall 2016; and Financial Statistics and Academic Libraries, FY 2016," U.S. Department of Education, NCES, IPEDS, December 2017, <https://nces.ed.gov/pubs2018/2018002.pdf>.

40 Note: However, the major financing mechanism—Pell grants and student loans—is limited to credit-bearing programs that meet certain time requirement and adjust to employers more slowly.

41 Jen Mishory, "The Future of Statewide College Promise Programs," The Century Foundation, March 2018, <https://tcf.org/content/report/future-statewide-college-promise-programs/>; Maryland, California, New Jersey, and West Virginia have all enacted or funded programs since the publication of that report.

42 Jen Mishory, "Free College: Here to Stay?" The Century Foundation, July 2018, <https://tcf.org/content/report/free-college-stay/>.

43 Ashley A. Smith, "Reports: Free College Programs Don't Benefit Low-Income Students," Inside Higher Ed, September 2018, <https://www.insidehighered.com/news/2018/09/06/new-reports-show-free-tuition-programs-may-not-help-low-income-students-much>.

44 Benjamin Collins, "Trade Adjustment Assistance for Workers and the TAA Reauthorization Act of 2015," Congressional Research Service, August 2018, <https://fas.org/sgp/crs/misc/R44153.pdf>.

45 Trends in College Pricing 2018, The College Board, <https://trends.collegeboard.org/college-pricing/figures-tables/average-net-price-over-time-full-time-students-public-two-year-institutions>.

46 Jolanta Juskiewicz, "Community College Students and Federal Student Financial Aid: A Primer," American Association of Community Colleges, April 2014, <https://files.eric.ed.gov/fulltext/ED557996.pdf>.

47 Sara Goldrick-Rab and Nancy Kendall, "The Real Price of College," The Century Foundation, March 2016, <https://tcf.org/content/report/the-real-price-of-college/>.

48 Brooke DeRenzi and Rachel Hirsch, "Job-Driven Financial Aid Policy: 50-State Scan," National Skills Coalition, December 2016, <https://www.nationalskillscoalition.org/resources/publications/file/Final-Job-Driven-Scan.pdf>.

49 Robert Shireman, Jen Mishory, and Sandy Baum, "Expanding Opportunity, Reducing Debt: Reforming California Student Aid," The Century Foundation, April 2018, <https://tcf.org/content/report/expanding-opportunity-reducing-debt/>.

50 Steven Klein, Financing Vocational Education, MPR Associates, 2001, [https://www.rti.org/sites/default/files/resources/financing\\_vocational\\_education.pdf](https://www.rti.org/sites/default/files/resources/financing_vocational_education.pdf).

51 Richard D. Kahlenberg, Robert Shireman, Kimberly Quick, and Tariq Habash "Policy Strategies for Pursuing Adequate Funding of Community Colleges," The Century Foundation, October 2018, <https://tcf.org/content/report/policy-strategies-pursuing-adequate-funding-community-colleges/>.

52 "ASAP at a Glance," The City University of New York, <http://www1.cuny.edu/sites/asap/about/asap-at-a-glance/>, accessed May 6, 2019.

53 The Higher Education Act (HEA) has a number of other quality checks to receive federal financial aid: it requires that schools limit the percent of student borrowers who enter repayment and then default within three years to no more than 30 percent ("cohort default rates"). It also requires programs to be accredited by accrediting agencies, and that programs last for at least fifteen weeks in order to receive Pell grants or federal student loans. Accreditors, in turn, require a wide range of reporting or benchmarks, and often those requirements vary significantly. The HEA also includes gatekeeping requirements in order to attempt to limit predatory behavior at for-profit entities, such as the gainful employment standard requiring minimum debt-to-earnings ratios, or the 90/10 requirement, an attempt to establish a market-level check on the quality of the product. The Department of Education has a long history of sending Title IV funds, authorized by the HEA, to predatory and fraudulent school, which has led to the current ban on the availability on Pell and student loan dollars for programs less than fifteen weeks.

54 Brooke DeRenzi and Rachel Hirsch, "Job-Driven Financial Aid Policy: 50-State Scan," National Skills Coalition, December 2016, <https://www.nationalskillscoalition.org/resources/publications/file/Final-Job-Driven-Scan.pdf>.

Colorado limits this aid to public community and technical colleges; Thomson Reuters Westlaw "Colorado Revised Statutes Title 23. Postsecondary Education § 23-3.3-1101," Findlaw, accessed April 2019, <https://codes.findlaw.com/co/title-23-postsecondary-education/co-rev-st-sect-23-3-3-1101.html>.

Iowa limited it to community colleges and to stackable credentials in high-need fields, "Iowa College Aid," <https://www.iowacollegeaid.gov/ScholarshipsAndGrants>; Nebraska also limits the program to community colleges in high need fields, "Community College Gap Assistance Program Act," Nebraska's Coordinating

Commission for Public Education, March 2017, [https://ccpe.nebraska.gov/sites/ccpe.nebraska.gov/files/Gap\\_Guidelines.pdf](https://ccpe.nebraska.gov/sites/ccpe.nebraska.gov/files/Gap_Guidelines.pdf).

Vermont can be used in almost any training program, but are relatively small (several million, a few thousand students), some self-reported data; "Vermont Nondegree Grant Outcomes Study," Vermont Student Assistance Corporation, January 2016, [https://www.vsbac.org/sites/default/files/uploads/pdf\\_resources/VT%20Nondegree%20report%202017%20FINAL.pdf](https://www.vsbac.org/sites/default/files/uploads/pdf_resources/VT%20Nondegree%20report%202017%20FINAL.pdf); West Virginia limits the dollars to programs that the community college and technical council deem a priority, "College Foundation of West Virginia," [https://secure.cfwv.com/Financial\\_Aid\\_Planning/Scholarships/Scholarships\\_and\\_Grants/WV\\_HEAPS\\_Grant.aspx](https://secure.cfwv.com/Financial_Aid_Planning/Scholarships/Scholarships_and_Grants/WV_HEAPS_Grant.aspx); Washington DC also limits the accessible programs and courses for free through the public University of the District of Columbia Community College, "Workforce Development," <https://www.udc.edu/cc/workforce-development/>.

55 "New Economy Workforce Credential Grant," State Council of Higher Education for Virginia, retrieved April 2019, <http://www.schev.edu/index/institutional/grants/workforce-credential-grant>.

56 The PROSPER Act, for example, expanded access to Pell grants for short-term, non-accredited programs with few guide rails to ensure quality. Prosper Act, HR 4508, 115th Cong., 1st sess., introduced December 21, 2017, <https://www.congress.gov/bill/115th-congress/house-bill/4508>.

57 "WIOA Performance Results," United States Department of Labor, retrieved April 2019, <https://www.doleta.gov/performance/results/#wioa-databook>.

58 Benjamin Collins, "Trade Adjustment Assistance for Workers and the TAA Reauthorization Act of 2015," Congressional Research Service, August 2018, <https://fas.org/sgp/crs/misc/R44153.pdf>.

59 "Trade Adjustment Assistance for Workers Program—Fiscal Year 2017," Employment and Training Administration U.S. Department of Labor, retrieved April 2019, <https://www.doleta.gov/tradeact/docs/AnnualReport17.pdf>.

Note: There is significant overlap even with these funding streams and community college opportunities: about 56 percent of TAA-funded training takes place on a community college campus; Jillian Berk, "Characteristics of Trainees and Training Programs in the Trade Adjustment Assistance TAA Program Under the 2002 Amendments," Mathematica Policy Research, August 30, 2012, <https://www.mathematica-mpr.com/our-publications-and-findings/publications/characteristics-of-trainees-and-training-programs-in-the-trade-adjustment-assistance-taa-program-under-the-2002-amendments>.

60 Rachel West, Indivar Dutta-Gupta, Kali Grant, Melissa Boteach, Claire McKenna, and Judy Conti, "Strengthening Unemployment Protections in America," Center for American Progress, NELP, Georgetown Law, June 2016, [https://cdn.americanprogress.org/wp-content/uploads/2016/05/31134245/UL\\_JSAreport.pdf](https://cdn.americanprogress.org/wp-content/uploads/2016/05/31134245/UL_JSAreport.pdf).

61 David Whitman, "The GOP Reversal on For-Profit Colleges in the George W. Bush Era," The Century Foundation, June 2018, <https://tcf.org/content/report/gop-reversal-profit-colleges-george-w-bush-era/>.

62 The Institute for College Access and Success, February 19, 2019, [https://ticas.org/sites/default/files/pub\\_files/ticas\\_response\\_to\\_senate\\_letter\\_final\\_2-15-19.pdf](https://ticas.org/sites/default/files/pub_files/ticas_response_to_senate_letter_final_2-15-19.pdf).

63 Wesley Whistle, Tamara Hiler, and Michael Itzkowitz, "Protecting Federal Dollars Flowing to New Short-Term Programs of Higher Education," Third Way, June 2018, <https://www.thirdway.org/report/protecting-federal-dollars-flowing-to-new-short-term-programs-of-higher-education>.

64 Portia Wu, "Workforce Innovation and Opportunity Act (WIOA or Opportunity Act) Title I

Training Provider Eligibility Transition," Employment and Training Administration Advisory System, U.S. Department of Labor, June 2015, [https://wdr.doleta.gov/directives/attach/TEGL/TEGL\\_41-14\\_Acc.pdf](https://wdr.doleta.gov/directives/attach/TEGL/TEGL_41-14_Acc.pdf).

Note: States and localities create criteria for what it means to be "eligible," looking at factors such as whether the program provides training in high demand fields, the completion rates for participants, and subsequent wage increases after the program. Amy K. Selzer and Lauren Eyster, "How States Manage Eligible Training Provider Lists: Findings from a State Survey," IMPAQ International, June 2015, [https://wdr.doleta.gov/research/FullText\\_Documents/ETAOP-2017-10%20EPTL%20Report%20\(Accessible%20PDF\).pdf](https://wdr.doleta.gov/research/FullText_Documents/ETAOP-2017-10%20EPTL%20Report%20(Accessible%20PDF).pdf).

65 Randall W. Eberts, "Individual Training Accounts Provided under the U.S. Workforce Investment Act," W. E. Upjohn Institute, 2010, <https://research.upjohn.org/cgi/viewcontent.cgi?article=1064&context=confpapers>.

Note: Programs providing larger benefit amounts with counseling support in determining training programs have shown the most significant impact. Other WIOA streams carry separate eligibility requirements.

"Larger Training Awards and Counseling Improve Cost Effectiveness: Long-Term Outcomes of Individual Training Accounts," Mathematica Policy Research,

August 2012. <https://www.mathematica-mpr.com/our-publications-and-findings/publications/larger-training-awards-and-counseling-improve-cost-effectiveness-longterm-outcomes-of-individual-training-accounts>.

**66** 19 U.S. Code § 2296.

**67** See, for example, Micahel Itzkowitz, Wesley Whistle, and Tamara Hiler, “Limiting Federal Funding to Higher Ed Programs that Leave Students in Poverty,” Third Way, June 2018, <https://www.thirdway.org/report/limiting-federal-funding-to-higher-ed-programs-that-leave-students-in-poverty>.

**68** Kenneth Fortson, Dana Rotz, Paul Burkander, Annalisa Matri, Peter Schochet, Linda Rosenberg, Sheena McConneli, and Ronald D’Amico, “Providing Public Workforce Services to Jobs Seekers: 30-month Impact Findings on the WIA Adult and Dislocated Worker Programs,” Mathematica Policy Research and Social Policy Research Associates, May 2017, [https://wdr.doleta.gov/research/FullText\\_Documents/ETAOP\\_2018-04\\_1-WIA-30mo-main-rpt.pdf](https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2018-04_1-WIA-30mo-main-rpt.pdf).

**69** Robert Lerman, “Are Employers Providing Enough Training? Theory, Evidence and Policy Implications,” Urban Institute, American University and IZA, retrieved April 2018, [https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga\\_168146.pdf](https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_168146.pdf). See also: Roy Maurer, “Higher Paid, More Educated Workers Receive More Job Training,” SHRM, April 2015, <https://www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/workers-receive-more-job-training.aspx>.

**70** “What Works In Job Training: A Synthesis of the Evidence,” U.S. Department of Labor, U.S. Department of Commerce, U.S. Department of Education, U.S. Department of Health and Human Services, July 2014, <https://www.dol.gov/asp/evaluation/jdt/jdt.pdf>; Angela Hanks and David Madland, “Better Training and Better Jobs: A New Partnership for Sectoral Training,” Center for American Progress, February 2018, <https://www.americanprogress.org/issues/economy/reports/2018/02/22/447115/better-training-better-jobs/>.

**71** One estimate has employers spending \$177 billion in formal job training at their firms. Anthony Carnevale, Jeff Strohl, and Artem Gulish, “College Is Just the Beginning,” Georgetown Center on Education and the Workforce, 2015 <https://cew-7632.kxcdn.com/wp-content/uploads/2015/02/Trillion-Dollar-Training-System-.pdf>.

**72** Data on the quality and trends related to those opportunities is sparse. See Robert Lerman, “Are Employers Providing Enough Training? Theory, Evidence and Policy Implications,” Urban Institute, American University and IZA, retrieved April 2018, [https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga\\_168146.pdf](https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_168146.pdf).

For analysis of who receives employer training dollars, see Anthony P. Carnevale, Jeff Strohl, and Artem Gulish, “College Is Just the Beginning: Employers’ Role in the \$1.1 Trillion Postsecondary Education and Training System,” Center on Education and the Workforce, Georgetown University, 2015, <https://cew-7632.kxcdn.com/wp-content/uploads/2015/02/Trillion-Dollar-Training-System-.pdf>

**73** Lindsey Woolsey and Garrett Groves, “State Sector Strategies Coming of Age: Implications for State Workforce Policymakers,” National Skills Coalition, accessed April 2019, <https://www.nationalskillscoalition.org/resources/publications/file/state-sector-strategies-coming-of-age.pdf>.

**74** Angela Hanks and David Madland, “Better Training and Better Jobs,” Center for American Progress, February 2018, <https://www.americanprogress.org/issues/economy/reports/2018/02/22/447115/better-training-better-jobs/>.

**75** Debra Bragg et al., “What Works for Adult Learners,” Allies 4 Innovation, December 2017, [https://www.allies4innovation.org/wp-content/uploads/2017/12/AECF-Findings-Brief\\_120717FINAL.pdf](https://www.allies4innovation.org/wp-content/uploads/2017/12/AECF-Findings-Brief_120717FINAL.pdf).

**76** “Apprenticeship funding: How it works,” Official United Kingdom Government, accessed April 2019, <https://www.citefast.com/styleguide.php?style=Chicago&sec=Webpage#h1>.

**77** “Department of Labor and Workforce Development Overview,” Department of the Treasury, Official Site of the State of New Jersey, accessed April 2019, <https://www.state.nj.us/treasury/omb/publications/12budget/pdf/62.pdf>.

**78** “Legislature Creates Washington College Grant Scholarship Program to Help Families Afford College & Apprenticeships; Expands Community College,” Washington State House Democrats website, April 28, 2019, <https://housedemocrats.wa.gov/hansen/2019/04/28/legislature-creates-washington-college-grant-scholarship-program-to-help-families-afford-college-apprenticeships-expands-community-college/>.