

Policies to rebuild America's workforce for geopolitical competition

America's security challenges are often framed in terms of equipment and investment—strained defense production lines, efforts to re-shore critical supply chains, intensifying competition over cutting-edge technologies, and the need to rebuild core energy, manufacturing, and logistics infrastructure. Yet underpinning all of these issues is a more basic limitation: **The United States does not have enough skilled workers to meet the demand.** It is a pervasive talent deficit that constrains the nation's capacity to build, compete, and protect its interests, and it is addressable.¹

The U.S. faces growing workforce shortages across industries critical to national resiliency and security, including manufacturing, AI, and cybersecurity. Three-quarters of companies struggle to find qualified talent, and 40 percent of adults lack basic digital skills.² This gap is especially concerning given that, by some estimates, the U.S. technology workforce is estimated to grow at twice the rate of the overall U.S. workforce in the next decade.³ Additionally, the net need for new employees in manufacturing alone is estimated to be around 3.8 million between 2023 and 2033, and around half of those jobs—1.9 million—could remain unfilled if the skills mismatch is not addressed.⁴ Exacerbating this skills mismatch is a lack of available training for workers in industries critical to U.S. security and resiliency. For example, energy-related apprenticeships would need to increase by 44 percent to meet the expected increase of roughly 200,000 workers needed in energy transmission and distribution.⁵

To strengthen the nation's economic security and resilience, the U.S. must expand and modernize the workforce for critical industries—from energy and manufacturing to cybersecurity and AI. **JPMorganChase launched the Security and Resiliency Initiative, a \$1.5 trillion, 10-year plan** to facilitate, finance, and invest in industries critical to national economic security and resiliency.

As part of this initiative, the firm will make direct equity and venture capital investments of up to \$10 billion to help select companies primarily in the United States enhance their growth, spur innovation, and accelerate strategic manufacturing to strengthen supply chain and manufacturing; defense and aerospace; energy independence and resilience; and frontier and strategic technologies, including AI, cybersecurity, and quantum computing.⁶ But financing strategic industries is only part of the equation. **Without a talent pipeline, capital cannot translate into production.**

Recommendations

JPMorganChase is committed to advancing the following policies to cultivate the talent pipeline for industries critical to U.S. security and resilience.

Federal

- Strengthen and scale apprenticeships
- Support employer-based training
- Advance industry/sector partnerships
- Support public-private partnerships
- Address the digital skills divide

State

- Expand access to work-based learning
- Leverage employer partnerships
- Advance data-driven decision-making

By the numbers

75%

of companies struggle to find qualified talent

3.8 million

new manufacturing workers needed by 2033

Federal Policy Recommendations

To address workforce shortages in critical industries, federal policymakers should focus on advancing policies that:

Strengthen and scale apprenticeships

Apprenticeships provide on-the-job training with formal classroom or online instruction to help workers master knowledge, skills, and competencies needed for career success.⁷ Apprenticeships are frequent pathways into skilled trades and, increasingly, to careers in technology and other industries.⁸

- [To incentivize employer participation](#) in Registered Apprenticeship programs—approved and validated by the U.S. Department of Labor or a State Apprenticeship Agency—the registration process for employers can be simplified and streamlined to address administrative barriers, such as having to re-register for the same program in multiple states. Also, standards for programs can be modernized without sacrificing quality to recognize different industry approaches to skilling.

Support employer-based training programs

Employer-based training programs, such as apprenticeships and incumbent worker training programs, allow workers to upskill and reskill to meet the evolving needs of critical industries.

- To scale such programs, policymakers can reauthorize the [Workforce Innovation and Opportunity Act \(WIOA\)](#), which focuses on strengthening the nation's public workforce system, to increase the percentage of WIOA Adult and Dislocated Worker funds that may be used for incumbent worker training and on-the-job training.

Advance industry/sector partnerships

Industry/sector partnerships can help address the skills mismatch by convening multiple employers in an industry with education, training, labor, and community-based organizations to develop strategies to respond to an industry's workforce needs.^{9,10}

- Policymakers [can provide support for industry/sector partnerships](#) and include performance measures to ensure high-quality industry partnerships are developed that meet industry needs.¹¹

Support public-private partnerships

Public-private partnerships help ensure that educational programs available to students and workers are aligned with in-demand industries.

- Policymakers [can incentivize higher education institutions to partner with industry](#) to develop programs that simultaneously allow students and workers to gain college credits and training aligned with in-demand jobs.

Address the digital skills divide

92 percent of jobs—including those in industries critical to security and resiliency—require digital skills,¹² yet one-third of manufacturing workers and half of all construction, transportation, and storage workers lack digital skills.^{13,14}

- Policymakers can promote American leadership in emerging industries by [amending WIOA](#) to expand the definition of basic skills deficiency to include digital literacy, and incentivize states and local workforce boards to expand the availability of digital literacy programs.^{15,16}

State Policy Recommendations

State policymakers can [strengthen career pathways](#) aligned to industries critical to U.S. security and resilience by advancing policies that:

Expand access to work-based learning opportunities

In addition to setting standards for high-quality work-based learning, such as apprenticeships and internships, states can expand access to work-based learning opportunities by establishing and supporting intermediaries at the state, regional, or local level to coordinate between employers, educators, and broker opportunities for learners.



Iowa

Iowa established the Work-Based Learning Intermediary Network, which is run by Iowa Workforce Development and consists of regional intermediaries tasked with connecting students to work-based learning experiences. In fiscal year 2022, over 3,000 industry partners collaborated with the intermediaries to provide more than 92,000 students with work-based learning experiences in industry clusters such as transportation, distribution, and logistics; information technology; manufacturing; and agriculture, food, and natural resources—to meet regional workforce needs.¹⁷

Leverage employer partnerships

States can encourage the participation of employers in the design and implementation of training programs, as well as the establishment of credential standards to ensure workers are developing skills and obtaining credentials aligned to in-demand industries.



Washington

The Washington Office of Superintendent of Public Instruction (OSPI) and the Manufacturing Industrial Council partnered with the private sector to develop Core Plus, a program that provides students with hands-on learning and transferable skills that align to career pathways in aerospace, construction, and maritime sectors.^{18,19} Core Plus is now taught in more than 10 skill centers and 25 comprehensive high schools in Washington state. Local employers have directly recruited students from participating high schools, demonstrating that the curriculum can prepare students for entry-level employment in the manufacturing field.²⁰

Advance data-driven-decision-making

States can align and enhance state and local data systems to connect career pathways to in-demand careers, measure student and worker outcomes, and align resources to the most effective programs.



Texas

In 2023, Texas altered its community college funding formula to reward community colleges based on their ability to achieve positive student outcomes, such as credential of value attainment.²¹ Texas was able to advance this policy in part because of [its strategic investment in data systems](#) that span education and workforce development systems. While still in its early stages of implementation, Texas' outcomes-based funding formula for community colleges has led to the development of and additional investments in programs aligned to local, in-demand industries, such as programs to train semiconductor technicians and programs in data analytics and technology.^{22,23}

Critical role of federal and state governments in Workforce Pell implementation

The expansion of federal Pell Grants, which provide need-based grants to low-income students, to include high-quality, short-term training programs marks a significant step toward making career-focused education more accessible and responsive to workforce needs. Under this expansion—referred to as Workforce Pell Grants—the federal government will establish regulations to support implementation, and states will play a critical role in assessing program eligibility using the metrics outlined in the law.²⁴ Policymakers should consider whether funds can be used to support the related classroom instruction requirement for apprenticeships.²⁵

- **The federal government** can align Workforce Pell Grants with the workforce system by establishing regulations that incentivize and promote coordination among governors on policies, funding, approval processes, data collection, and participant information across WIOA and Workforce Pell Grants programs to avoid duplication and siloed systems.²⁶
- **State policymakers** can look at promising practices states have previously leveraged to ensure quality implementation of state financial aid for short-term training programs to inform their approach to federal Workforce Pell Grants implementation. For example, **Virginia** implemented state financial aid data collection and disaggregation that includes non-degree credentials. The state leverages that data to inform decision-making on whether non-degree credentials are producing outcomes that meet state priorities and help workers meet their education and career goals.²⁷

Done well, Workforce Pell, can rapidly scale high-quality training in AI, cybersecurity, semiconductors, logistics, and other critical fields.

Moving Forward

JPMorganChase looks forward to working with policymakers to identify additional strategies to strengthen the workforce critical to U.S. security and resilience. To learn more about JPMorganChase's education and workforce development policy agenda, visit <https://www.jpmorganchase.com/impact/policy-center/careers>. To learn more about the firm's commitment to careers and skills, visit <https://www.jpmorganchase.com/impact/careers-and-skills>.



Endnotes

1. Georgetown University, Center on Education and the Workforce. (2025). Falling Behind: How Skills Shortages Threaten Future Jobs. <https://cew.georgetown.edu/cew-reports/skills-shortages/>.
2. Ryskamp, D. (2023, October 15). Aerospace and defense industry's demand for talent outpaces supply. Acara Solutions. <https://acarasolutions.com/blog/recruiting-trends/aerospace-and-defense-industrys-demand-for-talent-outpaces-supply/>.
3. Deloitte. (2024, March 10). Overcoming the tech talent shortage amid transformation. Deloitte Insights. <https://www.deloitte.com/us/en/insights/topics/talent/overcoming-the-tech-talent-shortage-amid-transformation.html?secureweb=OUTLOOK>.
4. Deloitte. (2024, May 5). Supporting US manufacturing growth amid workforce challenges. Deloitte Insights. <https://www.deloitte.com/us/en/insights/industry/manufacturing-industrial-products/supporting-us-manufacturing-growth-amid-workforce-challenges.html?secureweb=OUTLOOK>.
5. Goldman Sachs. (2024, April 20). Power industry may need more workers by 2030. Goldman Sachs Insights. <https://www.goldmansachs.com/insights/articles/power-industry-may-need-more-workers-by-2030>.
6. JPMorgan Chase. (2025, January 15). JPMC security resiliency initiative. JPMorgan Chase Newsroom. <https://www.jpmorganchase.com/newsroom/press-releases/2025/jpmc-security-resiliency-initiative>.
7. Jobs for the Future. (2023, August 10). Work-based learning glossary. JFF. <https://www.jff.org/idea/work-based-learning-glossary/>.
8. U.S. Department of Labor. (2024, March 5). Apprenticeship industries. Apprenticeship.gov. <https://www.apprenticeship.gov/apprenticeship-industries>.
9. National Skills Coalition. "Sector Partnership Policy Toolkit Summary." October 2016. <https://nationalskillscoalition.org/wp-content/uploads/2021/01/Sector-Partnership-Policy-Toolkit-Summary.pdf>.
10. National Skills Coalition. "Sector Partnership Policy Toolkit." National Skills Coalition. October 2015. <https://nationalskillscoalition.org/wp-content/uploads/2021/01/Final-Sector-Partnership-PolicyToolkit-1.pdf>.
11. National Skills Coalition. "Creating an Equitable, Resilient Workforce System: New Ideas for the Workforce Innovation and Opportunity Act." National Skills Coalition. May 2023. <https://nationalskillscoalition.org/wp-content/uploads/2023/05/FinalWIOARecs.pdf>.
12. National Skills Coalition. (2023, February). Digital divide report. https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide_report_Feb2023.pdf.
13. National Skills Coalition. (2020, December). Digital skills in manufacturing. <https://nationalskillscoalition.org/wp-content/uploads/2020/12/Digital-Skills-Manuf-NoCrps.pdf>.
14. National Skills Coalition. (2020, December). Digital skills in construction and transportation. <https://nationalskillscoalition.org/wp-content/uploads/2020/12/Digital-Skills-Const-and-trans-final.pdf>.
15. Business Roundtable. "Delivering Greater Opportunity: Public Policy Recommendations for a Modern Workforce Development System that Serves American Workers and Employers." July 2022. https://s3.amazonaws.com/brt.org/BRT_Workforce_Development_Public_Policy_Recommendations_July2022-4.pdf.
16. Advance CTE. "Advance CTE Recommendations for the Reauthorization of the Workforce Innovation and Opportunity Act." n.d. [Accessed May 2023], https://cte.careertech.org/sites/default/files/Advance_CTE_WIOA_Recommendations_2021.pdf.
17. Iowa Legislative Services Agency. (2022). Workforce development fund report. <https://www.legis.iowa.gov/docs/publications/DF/1367493.pdf>.
18. Advance CTE. (2021, August). Washington core plus. <https://careertech.org/resource/washington-core-plus/>.
19. Core Plus. (2021). Core Plus. <https://core-plus.org/>.
20. Advance CTE. (2021, August). Washington core plus. <https://careertech.org/resource/washington-core-plus/>.
21. Texas Association of Community Colleges. (n.d.). What is HB 8?. <https://tacc.org/tacc/what-hb-8>.
22. Commit Partnership. (n.d.). Texas Community College Finance Reform Incentivizes Student Outcomes [PDF]. <https://media.commitpartnership.org/share/PqL821fGxqNcgWxEpY1w>

23. Commit Partnership. (n.d.). State policy resources. <https://www.commitpartnership.org/state-policy-resources>.

24. Jobs for the Future. (2025). Budget bill expands Pell eligibility: What's next for students and providers? Jobs for the Future. Retrieved from <https://www.jff.org/blog/budget-bill-expands-pell-eligibility-whats-next-for-students-and-providers/>.

25. Apprenticeships for America. (2025, July). Workforce Pell and apprenticeship. <https://apprenticeshipsforamerica.org/news/advocacy-resources/92/92-Workforce-Pell-And-Apprenticeship>.

26. Business Roundtable. (2025) Business roundtable comments on implementation of workforce pell grants.

27. National Skills Coalition. (2024). State financial aid for non-degree credentials: Models and considerations for policy and program design. National Skills Coalition. Retrieved from https://nationalskillscoalition.org/wp-content/uploads/2024/07/State_Financial_Aid_July_2024.pdf.

About the PolicyCenter

The JPMorganChase PolicyCenter develops and advances sustainable, evidence-based policy solutions to drive inclusive economic growth in the U.S. and around the world. It is powered by the firm's unique global business resources and expertise, including data, research, talent, and philanthropic investments. The PolicyCenter works with policy, business, and community leaders to drive effective public policy solutions at all levels of government.

To learn more, visit <https://www.jpmorganchase.com/impact/policy-center>.