2024 Public Sector Impact Report

Tearing the Paper Ceiling: How State Actions Expand Opportunities for STARs

Opportunity @Work.

STARs
SKILLED THROUGH
ALTERNATIVE ROUTES.

This report summarizes insights from the 2024 NBER working paper "Tearing The Paper Ceiling: The Impact Of State Commitments To Remove Degree Requirements On Public Awareness And Job Opportunities For STARs."

Introduction

The public sector paves the way for workers Skilled Through Alternative Routes (STARs) with a shift to skills-based hiring.

The public sector plays an influential role in shaping the labor market. State, federal, and local governments are well recognized as important policy makers that influence economic trends as large employers. Over 15% of the labor force works in the public sector. Historically, the public sector has used this platform to improve the economic standing of historically excluded groups, such as women and Black workers. As leaders in talent management practices, public sector policies can affect how employers in the U.S. approach hiring which has the power to shift both public and private sector attention towards a skills-based approach to hiring and advancement.

States' reliance on degree requirements creates barriers for STARs. STARs are the 70+ million workers who are Skilled Through Alternative Routes other than a bachelor's degree. Training programs, community college, military service, on-the-job training, and more provide workers with relevant skills to move into higher-wage roles, but barriers such as four-year degree requirements included on government salary structures and job postings prevent advancement for STARs.

Over 25 states have taken action to remove degree requirements from government job postings and shift to skills-based hiring (see Table A1). State governments provide an excellent example of how the public sector can, and has, impacted hiring policy. Currently, there is no state where STARs are proportionately represented in state government hiring relative to their share of the state labor pool, despite STARs having the skills to fill in-demand roles. However, states have the potential to open over half a million opportunities for STARs by removing unneeded degree screens. Research shows a skills-based approach gives hiring managers the flexibility to swiftly respond to changes in the labor market and fill in-demand or new-to-world jobs where bachelor's degrees lag behind. States like Colorado have already seen gains in STAR employment, and other early adopting states have shown that making a commitment to hiring STARs can increase access to good-paying jobs.

States are leading the way to a stronger, more representative, workforce.

This report summarizes the findings of the 2024 NBER paper (Heck et al.). For more detailed information on methods and state actions please refer to the paper: "Tearing The Paper Ceiling: The Impact Of State Commitments To Remove Degree Requirements On Public Awareness And Job Opportunities For Stars."

Summary

The public sector is recognizing skills first. States have removed degree requirements, increasing awareness and access to opportunities for STARs.

This report summarizes key findings from a [2024 NBER working paper](#) about how states as public sector employers are committed to hiring workers based on skills and experience, rather than a four-year degree. Shifts to skills-based hiring can increase economic mobility for workers throughout the labor market **– including 70+ million STARs**.

The public sector has significant influence in shaping employment opportunities and has long used this power to create more opportunities for underrepresented groups and build a workforce that reflects the population they serve. When STARs are underrepresented in public employment, it weakens opportunities within government roles and sets a negative precedent for private sector hiring.

Here, we show that the public sector has taken positive steps to change policies, significantly changing awareness and hiring behaviors across both public and private sectors.

We provide three key insights:

- **INSIGHT #1:** Unnecessary degree requirements limit the public sector's access to talent.

- **INSIGHT #2:** State actions are driving increased awareness of STARs.

- **INSIGHT #3:** When states remove degree requirements, STARs experience greater opportunity.

State action is working.

Adopting skills-based hiring practices helps place qualified individuals in public sector positions, improving the economic mobility of STARs by opening quality career pathways. This approach also modernizes talent management, enabling organizations to respond more dynamically to evolving hiring needs.

"**If we rely on old hiring practices, we'll fall behind very quickly.** We want to make building job descriptions much more iterative to reflect the actual needs of that role at that moment."

KATHERINE KEEGAN
Colorado, Department of Labor and Employment

Unnecessary degree requirements limit the public sector's access to talent.

Public Sector employers have overlooked workers who are skilled through alternative routes.
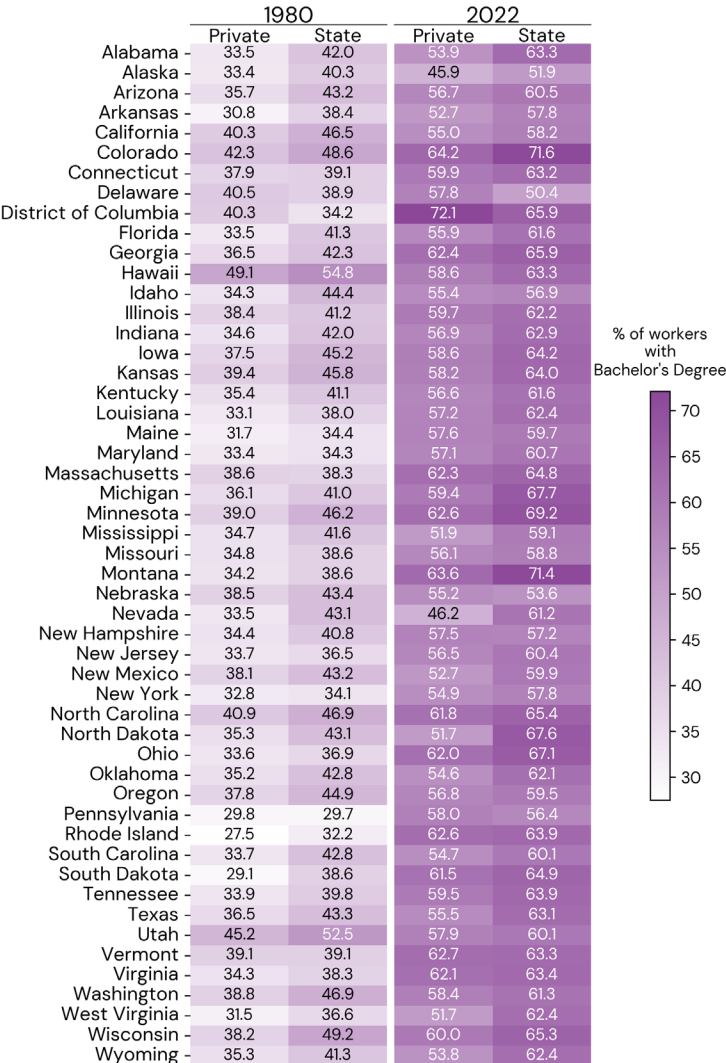
State governments have increased their reliance on degrees as a signal of skill: STARs and workers with degrees often work in the same jobs,[1] but since 1980 the share of workers with degrees employed in state government has grown from an average of 41% to 62% in 2022 (Figure 1). Currently, STARs are underrepresented in state employment leading to a national deficit of nearly 1 million STARs.[2]

States employ more degree holders than the private sector: The share of degree holders in the private sector has also grown over time; however, state governments consistently employ a higher share.[3] North Dakota and Nevada have the largest gap (15 percentage points) between state and private sectors. Exceptions to this trend such as D.C. and Delaware, have a larger share of degree holders in the private sector.

Reliance on degrees is hindering public sector hiring efforts: States are facing hiring and retention challenges, posting more roles but receiving fewer applicants per role. Between 2016 – 2022, applicants per job decreased by 74%. Removing unnecessary degree requirements from job postings has the potential to help fill these in–demand roles while opening opportunities for STARs.

FIGURE 1: THE PERCENTAGE OF WORKERS WITH DEGREES HAS RISEN IN THE PUBLIC AND PRIVATE SECTORS SINCE 1980.

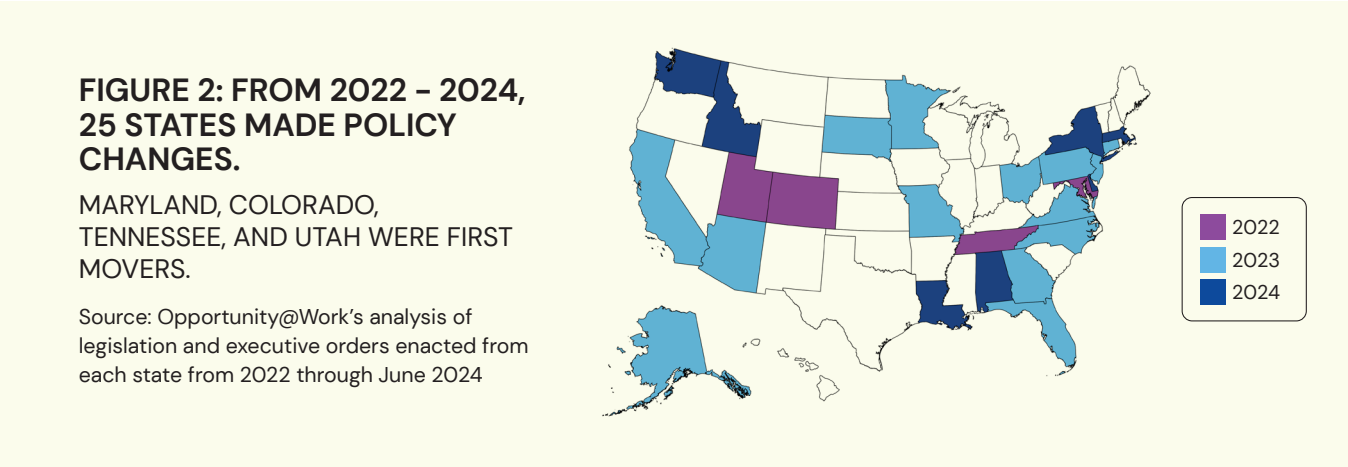STATE GOVERNMENTS EMPLOY MORE WORKERS WITH DEGREES THAN THEIR PRIVATE SECTOR COUNTERPARTS.

	1980		2022	
	Private	State	Private	State
Alabama	33.5	42.0	53.9	63.3
Alaska	33.4	40.3	45.9	51.9
Arizona	35.7	43.2	56.7	60.5
Arkansas	30.8	38.4	52.7	57.8
California	40.3	46.5	55.0	58.2
Colorado	42.3	48.6	64.2	71.6
Connecticut	37.9	39.1	59.9	63.2
Delaware	40.5	38.9	57.8	50.4
District of Columbia	40.3	34.2	72.1	65.9
Florida	33.5	41.3	55.9	61.6
Georgia	36.5	42.3	62.4	65.9
Hawaii	49.1	54.8	58.6	63.3
Idaho	34.3	44.4	55.4	56.9
Illinois	38.4	41.2	59.7	62.2
Indiana	34.6	42.0	56.9	62.9
Iowa	37.5	45.2	58.6	64.2
Kansas	39.4	45.8	58.2	64.0
Kentucky	35.4	41.1	56.6	61.6
Louisiana	33.1	38.0	57.2	62.4
Maine	31.7	34.4	57.6	59.7
Maryland	33.4	34.3	57.1	60.7
Massachusetts	38.6	38.3	62.3	64.8
Michigan	36.1	41.0	59.4	67.7
Minnesota	39.0	46.2	62.6	69.2
Mississippi	34.7	41.6	51.9	59.1
Missouri	34.8	38.6	56.1	58.8
Montana	34.2	38.6	63.6	71.4
Nebraska	38.5	43.4	55.2	53.6
Nevada	33.5	43.1	46.2	61.2
New Hampshire	34.4	40.8	57.5	57.2
New Jersey	33.7	36.5	56.5	60.4
New Mexico	38.1	43.2	52.7	59.9
New York	32.8	34.1	54.9	57.8
North Carolina	40.9	46.9	61.8	65.4
North Dakota	35.3	43.1	51.7	67.6
Ohio	33.6	36.9	62.0	67.1
Oklahoma	35.2	42.8	54.6	62.1
Oregon	37.8	44.9	56.8	59.5
Pennsylvania	29.8	29.7	58.0	56.4
Rhode Island	27.5	32.2	62.6	63.9
South Carolina	33.7	42.8	54.7	60.1
South Dakota	29.1	38.6	61.5	64.9
Tennessee	33.9	39.8	59.5	63.9
Texas	36.5	43.3	55.5	63.1
Utah	45.2	52.5	57.9	60.1
Vermont	39.1	39.1	62.7	63.3
Virginia	34.3	38.3	62.1	63.4
Washington	38.8	46.9	58.4	61.3
West Virginia	31.5	36.6	51.7	62.4
Wisconsin	38.2	49.2	60.0	65.3
Wyoming	35.3	41.3	53.8	62.4

% of workers with Bachelor's Degree

- 70
- 65
- 60
- 55
- 50
- 45
- 40
- 35
- 30

Source: Opportunity@Work's analysis of the 1980 and 2000 Decennial Census and the 2022 1–Year American Community Survey, accessed via IPUMS
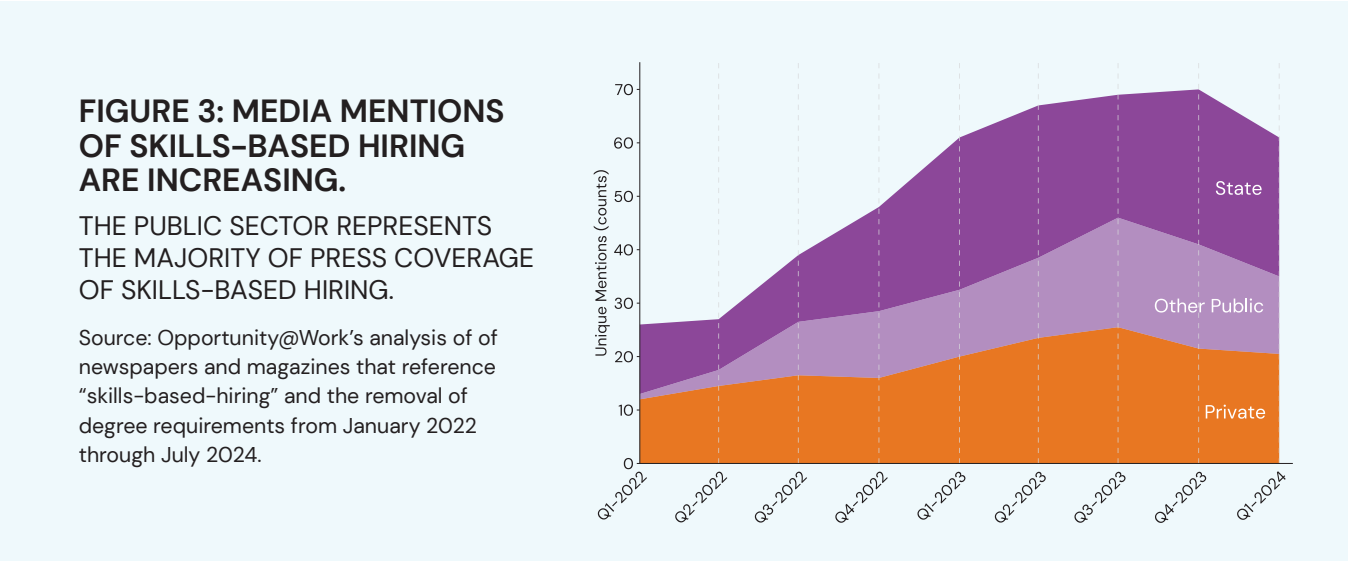
State actions are driving increased awareness of STARs.

The majority of states have taken action to remove unnecessary degree requirements from state jobs.

States have enacted legislation and executive orders to change talent acquisition and management practices: In 2022, Maryland, Colorado, Tennessee, and Utah led the way in removing degree requirements from government job postings. By 2024, 25 states had adopted similar policies to prioritize skills and experience (Figure 2), and the number of committed states continues to grow.[4] Across the first 25 states, 60% initiated policy change through executive actions, with 40% utilizing legislation. Additional actions within or in addition to the commitments to support implementation included actions like, the formation of a task force (32%) and allocation of funding (16%) (Tables A1 & A2).

FIGURE 2: FROM 2022 – 2024, 25 STATES MADE POLICY CHANGES.

MARYLAND, COLORADO, TENNESSEE, AND UTAH WERE FIRST MOVERS.

Source: Opportunity@Work's analysis of legislation and executive orders enacted from each state from 2022 through June 2024

Legend:
- 2022
- 2023
- 2024

State policy changes are driving broader awareness of STARs: As states implemented policy changes, awareness of skills-based hiring also grew. Press coverage increased by 58%, with most attention focused on the public sector. The private sector followed this trend more gradually, reinforcing the public sector's role as a leader in skills-based talent strategies (Figure 3).

FIGURE 3: MEDIA MENTIONS OF SKILLS–BASED HIRING ARE INCREASING.

THE PUBLIC SECTOR REPRESENTS THE MAJORITY OF PRESS COVERAGE OF SKILLS–BASED HIRING.

Source: Opportunity@Work's analysis of of newspapers and magazines that reference "skills–based–hiring" and the removal of degree requirements from January 2022 through July 2024.

Growing awareness impacts behaviors across the broader workforce.

An awareness campaign changed perceptions and behavior.

The "Tear the Paper Ceiling" (TTPC) campaign is a multi-media effort launched in 2022. TTPC aims to increase awareness of workers skilled through alternative routes and the barrier posed by "the paper ceiling." Using public service announcements and storytelling in traditional and social media, it speaks to both employers and STARs about the invisible barriers encountered by STARs in the workforce. We tracked the effects of this campaign over multiple surveys to measure the shifts in awareness, attitudes, perceptions, and behaviors among employers and STARs.

The TTPC campaign has a measurable impact on awareness and behavior. Workers who are skilled through alternative routes are significantly more aware of the term STAR and "tearing the paper ceiling" since the beginning of TTPC, which has led to increased confidence when searching for jobs and pride in using the term STAR with potential employers, friends, and family. Employers have also had a significant increase in awareness regarding STARs and continue to take actions to remove degree barriers and promote skills-based hiring.

+41%

38%
Employer awareness of "tearing the paper ceiling"

+50%

21%
STARs awareness of "tearing the paper ceiling"

83%
of campaign-aware **employers** consider hiring STARs for more jobs now than 2–3 years ago
(+15% vs. non-campaign-aware)

29%
of campaign-aware **STARs** have described themselves as a "STAR"
(+19% vs. non-campaign-aware)

For more information on TTPC and how you can "tear the paper ceiling," please visit tearthepaperceiling.org.

THE PAPER CEILING:

(noun): The invisible barrier that comes at every turn for workers without a bachelor's degree. See also: no alumni network, biased algorithms, degree screens, stereotypes, and misperceptions.

When states remove degree requirements, STARs experience greater opportunity.

State policies reduce barriers and increase STAR access to good-paying jobs.

More state jobs opened to STARs after policy changes: A year after adopting policy changes, the first 18 states had fewer job postings requiring a degree. Nearly half of new postings were for roles with lower degree requirements. Each year following these commitments, degree requirements fell by 2.5%, while states without these policies saw smaller changes.

Many of these jobs are good-paying jobs: The first 18 states that committed to removing degree requirements had over 90,000 state job postings for good-paying roles (paying above the national median wage). Before these policies, 63% of good-paying jobs in those states were open to STARs; a year later, 68% were, making nearly 4,000 more good jobs accessible to STARs. The biggest shifts were in 10 occupations, including communications and financial & accounting managers (Figure 4).

FIGURE 4: GOOD-PAYING JOBS HAD LARGE SHIFTS IN POSTING BEHAVIORS BEFORE AND AFTER STATE COMMITMENTS (2022 – 2024)

SKILLS RATHER THAN A DEGREE ARE USED TO SCREEN CANDIDATES
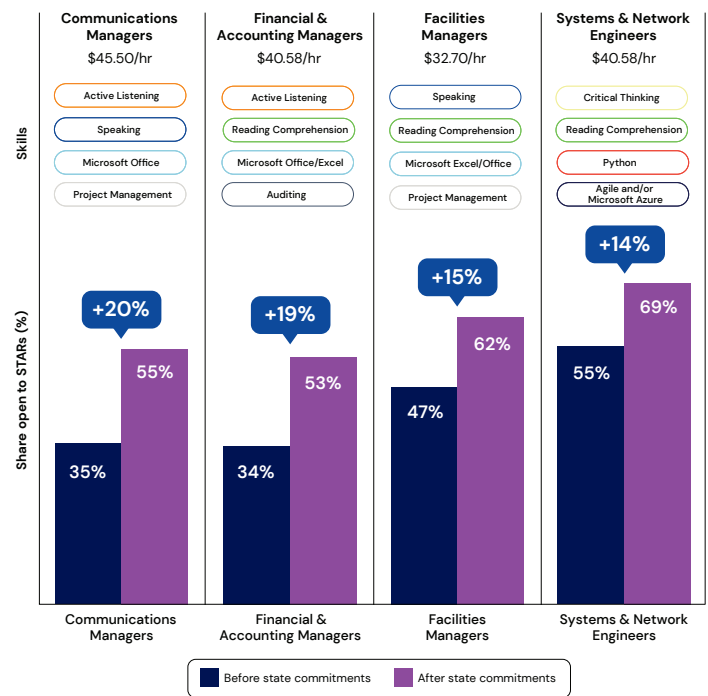
Source: Opportunity@Work's analysis of Lightcast Job Postings, 2021 – 2024 and the 2022 & 2023 1-year ACS, IPUMS.

"We are creating opportunities for everyone, not just those with education. We want to draw on all kinds of experiences… Now we have an opportunity to recruit this talent and retain them."

MELISSA WALKER
Colorado, Department of Labor and Employment

The State of Colorado implements skills-based talent practices.

This change required a top to bottom commitment.

Colorado is home to **1.3 million STARs**. The state recognized the benefits of skills-based hiring to meet its hiring goals, prepare for unexpected talent challenges, and build a workforce representative of its community. Colorado took a top-to-bottom approach to implement organizational change, led by executive orders and supported with interim milestones and funding for changes at the agency and individual levels (Figure 5).

Colorado acknowledges that it is still in the early stages of its shift toward skills-based hiring. Job postings have evolved as hiring managers replace degree requirements with criteria rooted in skills and years of experience. By July 2024, 48% of job descriptions reflected this shift, up from 31% the previous year. **State officials believe they are on track to reach their goal** of 100% by 2025. Additionally, agencies have expanded work-based learning opportunities, launching 33 new programs since September 2023, including six new apprenticeship initiatives.

FIGURE 5: COLORADO IMPLEMENTED A THREE-PRONGED APPROACH TO ORGANIZATIONAL CHANGE.

COLORADO DRIVES RESULTS BY SETTING CLEAR EXPECTATIONS AND THE NECESSARY RESOURCES FOR INSTITUTIONAL CHANGE.

STATE GOAL

Governor Polis **signed executive orders to formalize the state's commitment to** skills-based hiring and work-based learning. Together, these send a clear signal that building a state government hiring and advancement system based on skills is a priority for his administration.

AGENCY TARGETS

The orders **set specific targets to guide a collective effort**, including goals and annual milestones at the agency level for the removal of degree requirements and the creation of work-based learning programs.

INDIVIDUAL TARGETS

To facilitate transition to an ambitious vision, **Governor Polis allocated a $700K budget** for staffing and other related expenses.

For more information about Colorado see our case study. For more information about other state actions taken to improve hiring outcomes, see appendix tables A1 & A2.

Conclusion

The public sector can build a representative workforce by prioritizing skills-first hiring.

The majority of states have recognized how skills-based hiring can modernize their talent management practices (Table A1). Skill sets – rather than degrees – allow employers to find qualified talent for open roles, including in-demand, niche, and/or new-to-world positions. Since 1980, degree requirements for government pay scales and job postings have made advancement difficult for STARS (50% of the labor force).

Shifting to skills-based hiring practices not only places talented employees in public sector roles but also impacts the earnings of state residents by improving the economic mobility of STARs. When degree requirements are removed, we demonstrate that the shares of good-paying jobs open to STARs increase.

STARs have the skills to fill public sector roles.

STARs are present in many of the same roles as bachelor degree holders. Despite this, across most state governments workers with degrees hold the majority of government roles. Degree barriers, whether present on job postings or applied during internal filtering by hiring managers, overlook workers skilled through alternative routes.

Awareness of STARs can lead to behavior change.

The public sector has demonstrated a growing awareness of skills-based hiring practices as represented by coverage from the popular press. This awareness mirrors the momentum seen among states to remove degree requirements from job postings. Among STARs, awareness has also grown, increasing confidence when job seeking and the likelihood of representing themselves as a STAR. States are tearing the paper ceiling and opening roles to STARs.

The public sector can influence hiring behaviors for STARs.

Of the first 18 states that made commitments to remove degree requirements, there was a 7% increase in middle and high-wage jobs open to STARs. The state of Colorado demonstrates that changing hiring practices across the public sector is possible, but will take time, energy, and buy-in throughout organizations.

Policy change in the public sector can lead the way for the private sector, and move STARs into meaningful roles that increase earnings and long-term economic mobility.

Still, there is more work to do. Encouraging organizational and individual change is required after the removal of unnecessary degree requirements to build a skills-based economy that taps into all of the talent that exists in communities. The good news is that many states are already taking action to meet their commitments (see Table A2).

9

Call to Action

The public sector can show the way.

To build a labor market based on skills, the government can model the changes required to spark private sector employers' imagination of what is possible. In particular, employers in the public sector can accelerate skills-based change by...

1 **Removing degree requirements from job classification system:** For roles that do not require a degree, consider using skills as the first signal of fit for job applicants by updating your classification system to one that is based on skills for minimum qualifications.

2 **Using skills and experience to determine advancement opportunities:** Within job series, higher level roles often require degrees, while lower lever roles may not. Foster a strong internal talent pool by recognizing skills developed on-the-job as a metric for career advancement within a job series.

3 **Providing the leadership support necessary to encourage change:** Effective systems change requires organizational and individual behavior change. Leadership at every level play a crucial role in developing a vision, setting goals, and providing encouragement to reinforce the commitment to skills-based talent practices.

4 **Encouraging agency coordination to build a skills-based talent ecosystem:** Collaboration between departments leading HR and workforce/labor can not only ensure similar practices within and across state hiring, but it can also reduce duplication of effort and scale shared practices between the state's hiring system and the public workforce system.

5 **Funding the implementation of skills-based talent practices:** Rewiring the hiring and advancement systems of an organization is a significant investment. Appropriations and/or the Governor's Reserve Funds could be utilized to practice change by hiring dedicated personnel, modernizing HRIS systems, developing comprehensive training programs for employees on skills-first practices, and more.

From city halls to state agencies to federal departments, skills-based talent practices offer a transformative approach to hiring and workforce development. By focusing on what individuals can do rather than solely on degrees or years of experience, this approach broadens talent pipelines and ensures that the public sector is staffed with the most capable professionals.

There are a variety of different ways that states are changing organizational and individual behaviors to advance skills-first talent practices to move to a skills-based hiring and advancement system (see Table A2). By implementing skills-based talent strategies, governments can attract top talent, foster economic mobility, and build a workforce that reflects the skills and potential of the communities they serve..

Learn more about cutting edge skills-based talent practices in the public sector and get the support you need by becoming a part of the STARs Public Sector Hub

Appendix

TABLE A1. LIST OF STATE EXECUTIVE ACTIONS, LEGISLATION, AND INITIATIVES.

Please note: some states identified with Executive Orders may have removed degree requirements through the administrative authority of the governor.

State	Date	Commitment	State	Date	Commitment
Maryland	3/15/22	Administrative Order	Florida	6/16/23	Passed Legislation
Colorado	4/14/22	Executive Order	Connecticut	6/29/2023, 6/6/2024	Passed Legislation
Tennessee	4/25/22	Passed Legislation	Missouri	7/6/23	Passed Legislation
Utah	3/11/2021, 12/13/2022	Passed Legislation, Executive Action	California	8/31/23	Executive Order
Pennsylvania	1/18/23	Executive Order	Michigan	10/4/23	State Initiative
Alaska	2/14/23	Executive Order	Minnesota	10/30/23	Executive Order
North Carolina	3/13/23	Executive Order	New York	1/9/24	Administrative Order
Arizona	4/7/23	Passed Legislation	Delaware	1/11/24	Policy Change
New Jersey	4/10/23	Executive Order	Massachusetts	1/25/24	Executive Order
South Dakota	4/24/23	Executive Order	Idaho	3/19/24	Passed Legislation
Georgia	4/27/23	Passed Legislation	Alabama	5/17/24	Passed Legislation
Ohio	5/15/23	Executive Order	Louisiana	6/3/24	Passed Legislation
Virginia	5/30/23	Executive Order	Washington	6/6/24	Passed Legislation

Appendix

TABLE A2. A CONTINUUM OF ACTIONS TAKEN BY STATES TO TEAR THE PAPER CEILING.

List of ways in which states are changing organizational and individual behaviors to shift towards skills–based talent practices.

Awareness	Public Commitment	Internal Actions (Organizational Behaviors)	Internal Actions (Individual Behaviors)

• Media stories, citing new reports/data on STARs, and/or that other states have made commitments
• Public Awareness Campaigns (e.g., Tear The Paper Ceiling)
• Conferences and events where new reports/data and/or commitments/actions that other states are taking
• Knowledge of STARs w/in own lives and/or organization
	• Executive Order, Administrative Order, HR Policy Change or legislation to:
	  • Remove unnecessary degree requirements
	  • Review and/or develop a report on education requirements for state jobs
	• Participation in the National Governors Association's Skills in the States Community of Practice
	• Initiation of Task Force on state hiring practices
	• Budget allocation to support implementation of skills–based practices
		• Develop accountability measures
		• Hire staff to focus solely on implementation of skills–based talent practices
		• Build skill equivalencies for job categories
		• Design updated job descriptions template
		• HR policy guidance designed and shared with HR teams and hiring managers
		• Build and deliver training for HR analysts and hiring managers
		• Build interventions to support the development of skills–based talent system, like:
		  • Skill banks for job categories
		  • Shared certifications
		  • Updates to state job boards
		  • Updates to ATS/HRIS system
		  • Definition and guidance of skills–based assessments
		• Update classification system to be based on skills through personnel board/rules
		• Make skills–based talent practices an HR universal policy
			• Participate in training on skills–based talent practices for hiring managers
			• Utilize guidance and templates for building job descriptions based on skills
			• Use required skills–based job templates in ATS/HRIS
			• Determine which of skills–based assessments to utilize to evaluate candidates
			• Utilize skills–based assessments to evaluate candidates at multiple stage-gates

Changed Outcomes			
• Increased number of STAR applicants • Increased number of STARs making it through minimum qualification reviews		• Increased share of STARs in middle and high wage occupations • Increased internal mobility for STARs in state employment	

Endnotes

1. 82% of degree holders are in an occupation where the share of STARs is 10% or more.

2. The deficit of STARs is relative to their share of the state labor pool.

3. Occupational composition was controlled between state and private sectors.

4. Since the release of "Tearing the Paper Ceiling: The Impact of State Commitments to Remove Degree Requirements on Public Awareness and Job Opportunities for STARs," the number of states making commitments has increased.

Working Paper Citation: Heck, Justin, Blair Corcoran de Castillo, Peter Blair, and Papia Debroy. 2024. "Tearing the Paper Ceiling: The Impact of State Commitments to Remove Degree Requirements on Public Awareness and Job Opportunities for STARs." Cambridge, MA: National Bureau of Economic Research. https://www.nber.org/papers/w33220.