Who Are Universities For? The Role of Degrees and Skills in Regional Mobility

Dr. Justin Heck

Opportunity @ Work

STARs
SKILLED THROUGH ALTERNATIVE ROUTES™

Five Takeaways

- STARs are skilled.
- Mobility is structured locally.
- Anchor institutions matter.
- AI increases urgency.
- Universities must decide *who* they are for.

Recognizing Talent Beyond Credentials



Thaddaeus Edwards

Tech Support Technician

The University of North Carolina - Chapel Hill

"I've gotten a lot of satisfaction just being helpful and helping people find things or helping people connect dots that they didn't really know were connected."



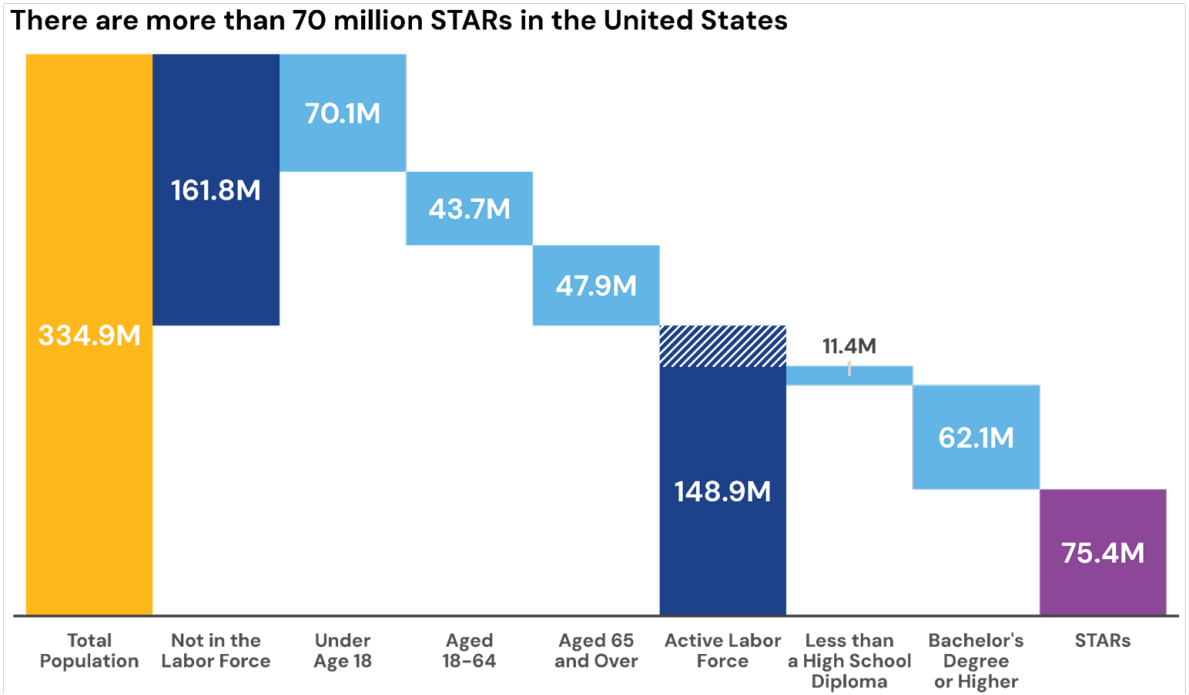
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Who Are STARs

The majority of US Workers are Skilled Through Alternative Routes

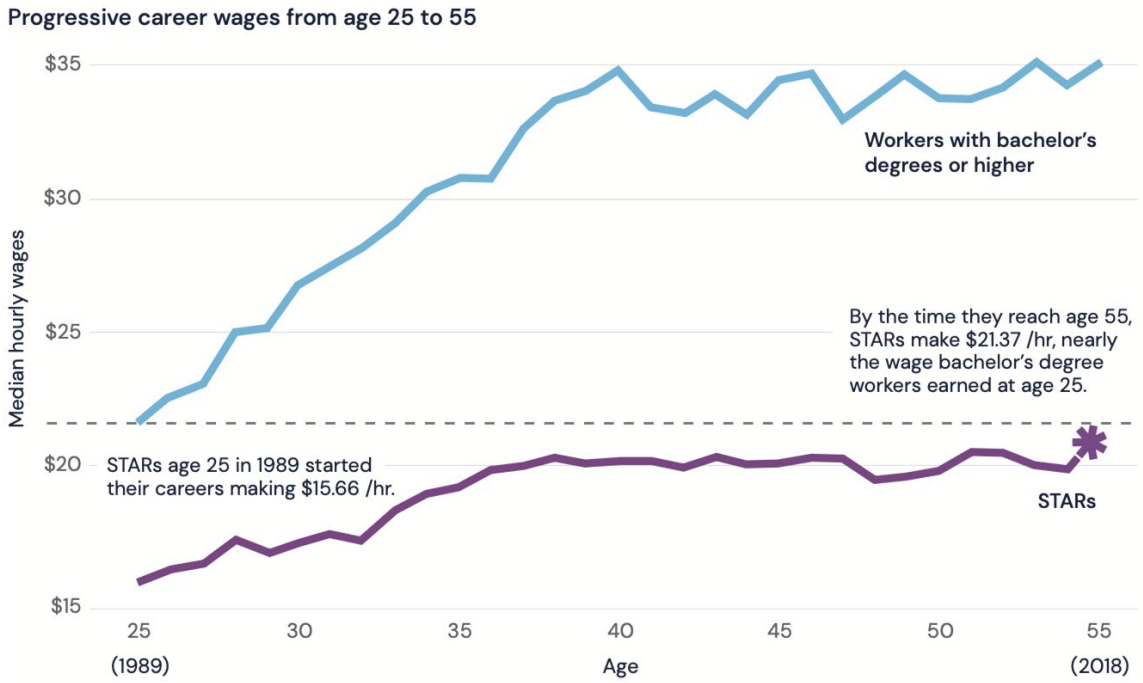
STARs are workers who are Skilled Through Alternative Routes.

STARs are aged 25 or older, active in the labor force, have a high school diploma or equivalent, and have developed their skills through alternative routes such as community college, apprenticeships, bootcamps, and most commonly, through on-the-job experience.



*Estimates are limited to the civilian, non-institutionalized labor force aged 25 and older. This excludes approximately 298K workers.
Source: Opportunity@Work analysis of the 2023 1-year American Community Survey, Integrated Public Use Microdata Sample.

It takes 30 years for a STAR to reach the wages of a new college graduate.



Note: Median hourly wages in 2019 dollars for workers aged 25 to 29 in 1989. Dotted line indicates median hourly wages for workers with a bachelor's degree at age 15 ($21.59).
Source: Adapted from Blair, Debroy, and Heck (2021). Data are from the 1989 to 2019 Current Population Survey, Annual Social and Economic Supplement, Integrated Public Use Microdata Series.

“Unskilled” is a Narrative, Not a Fact

Historically, workers without bachelor’s degrees have been classified as “unskilled labor” by economists and government agencies.

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Population Survey (1970–2001). It illustrates the unemployment processes for unskilled workers (high school diploma or lower) and for skilled workers (some college or above). The two processes differ dramatically. Unskilled workers are not only subject to a higher level of un-

First, the demand for unskilled labor (defined as workers with no more than a basic education) has fallen substantially over the past couple of decades, relative to the demand for skilled labor, in most developed countries. This shift

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change. The relative supply of skilled labor (i.e., college educated workers) has been rising over the last several decades in the U.S., but this rise has been accompanied by a well-documented increase in the relative wages of these workers. These facts imply



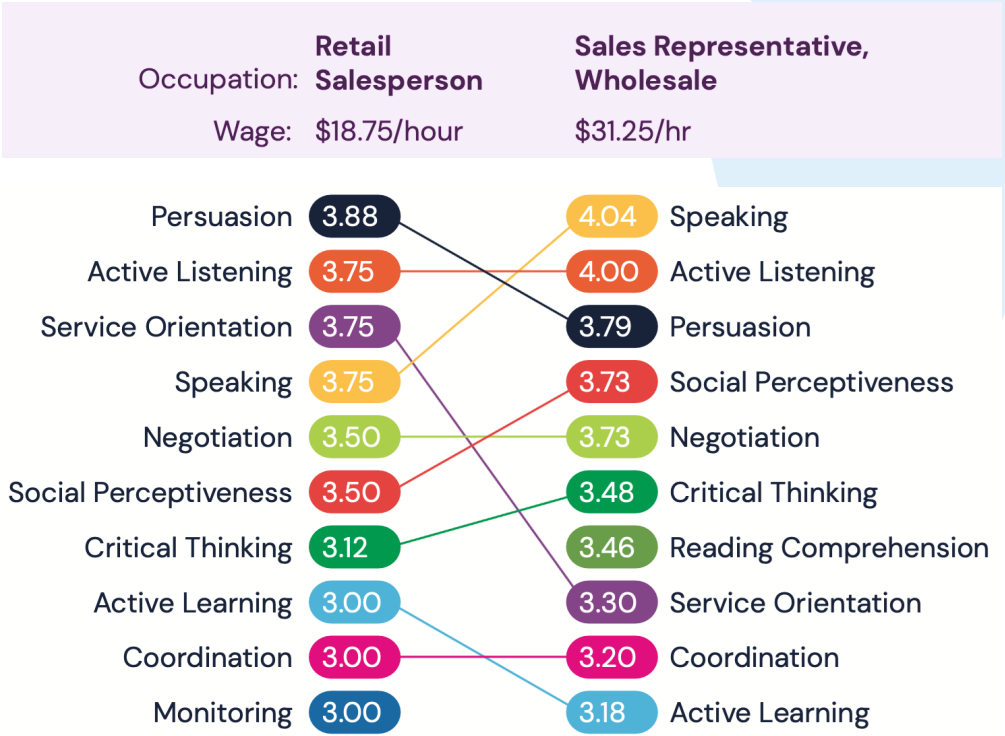
"[M]any "low-skill jobs" held by "low-skill workers" are anything but. Many of these are difficult, physically and emotionally taxing jobs that, in fact, require employees to develop extraordinary skills, if not ones you learn at medical school or MIT."
- Annie Lowrey, *The Atlantic*

Low Wage Does Not Mean Low Skill

Here, we illustrate the high skills overlap across two roles. The first is accessible to STARs, while the second is less so.

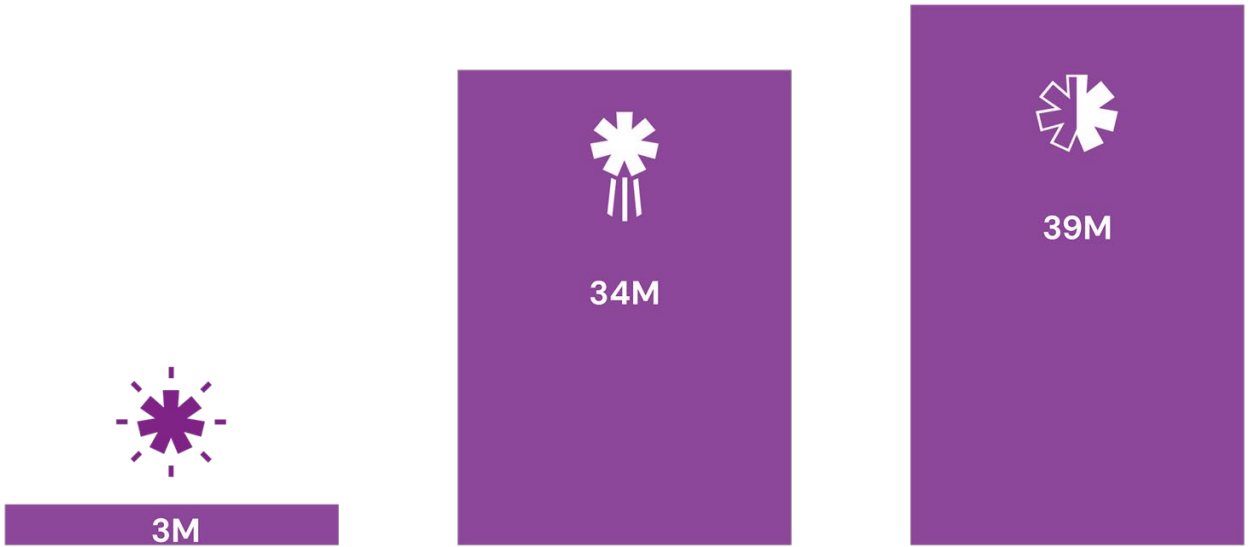
However, STARs develop valuable and transferable skills that should offer mobility into these higher-wage roles.

Around 96,000 STARs have made this exact job transition in the 5-year period from 2017 to 2021.



Source: Opportunity@Work analysis of the Occupational Information Network (O*NET) 25.3 Database and 2012 to 2021 Current Population Survey, Annual Social and Economic Supplement, Integrated Public Use Microdata Series. Blair, Debroy, and Heck (2021).

34 Million STARs have skills for higher-wage work today



Shining STARs
STARs who are in high-wage roles today

Rising STARs
STARs who have multiple mobility pathways into significantly higher-paying occupations

Forming STARs
STARs who have skills to see smaller wage gains through more limited employment pathways

Source: Opportunity@Work analysis of the 2023 1-year American Community Survey, IPUMS.

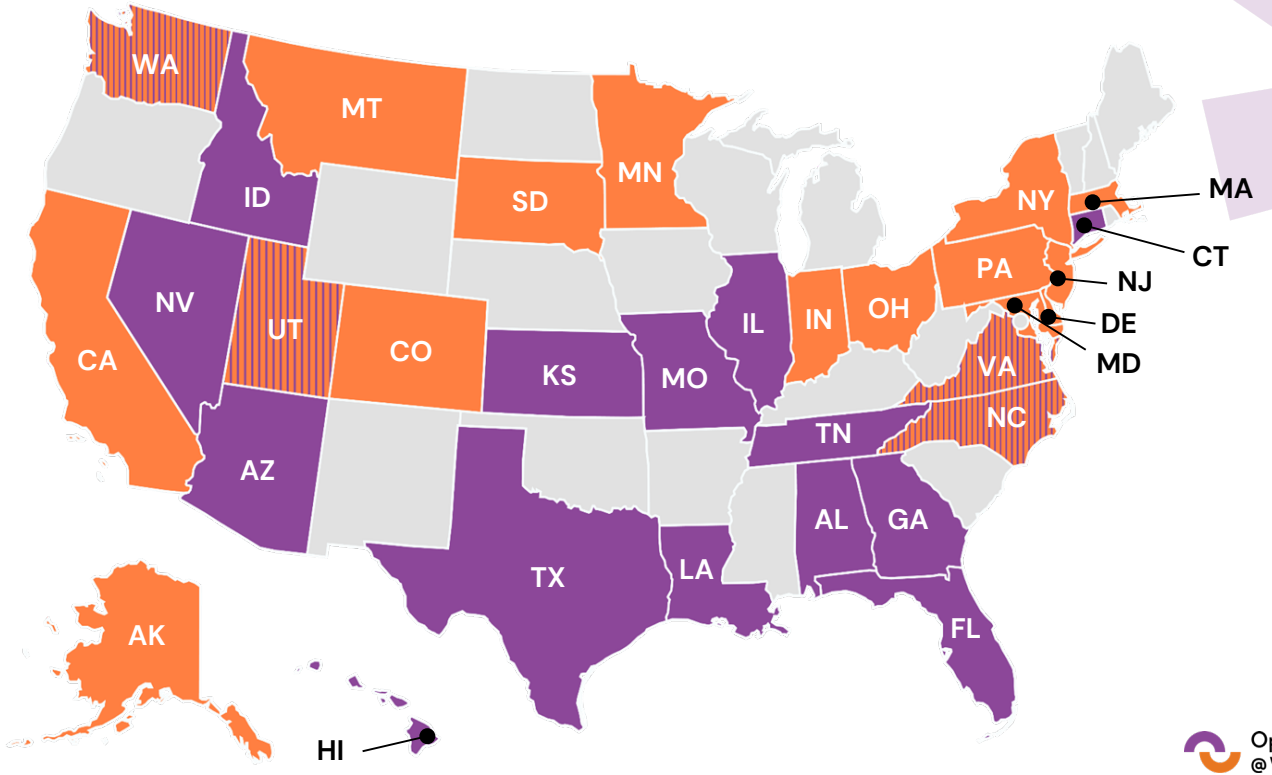
Research → Policy → Access to Good Jobs

32 states have committed to removing unnecessary degree requirements or advancing skills-based talent practices, unlocking access to over **741,000 good jobs** in the public sector

14
Passed legislation

14
Governor signed Executive Orders or Administrative Authority

4
Implemented both actions



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The Commonwealth of Pennsylvania is leading in skills-based workforce planning

Skills-Based Practices in Action

Executive Order 2023-03

Removes four-year degree requirements.

Goal: widen the applicant pool for 92% of state jobs, or 65,000 positions, while streamlining hiring.

Executive Order 2024-01

Establishes the Hire, Improve, Recruit, Empower (HIRE) Committee.

Goal: expand pathways, improve workplace accessibility, and support employee retention.

Executive Order 2025-01

Recognizes federal and Commonwealth experience equally.

Goal: allow individuals to translate skills and experience more easily for essential positions.

Early impacts: actions have led to **reductions of hiring times by 32%** and filled nearly 600 previously vacant permitting, licensing, and certification jobs.

From Policy to Practice

Philadelphia removed unnecessary degree requirements and launched the **City College of Municipal Employment (CCME)** to tackle the 6,000 vacancies in city government.

City College of Municipal Employment

Free workforce training for 6 in-demand areas:

- Skilled trades
- Health care
- Technology
- Business and administration
- Public safety
- STEM

Community engagement:

Cross-promotion and recruitment through existing ecosystem partners.

Wraparound supports:

Paid job experience, certification support, and career coaching

62% participant retention rate &

20% wage increase for promoted CCME graduates



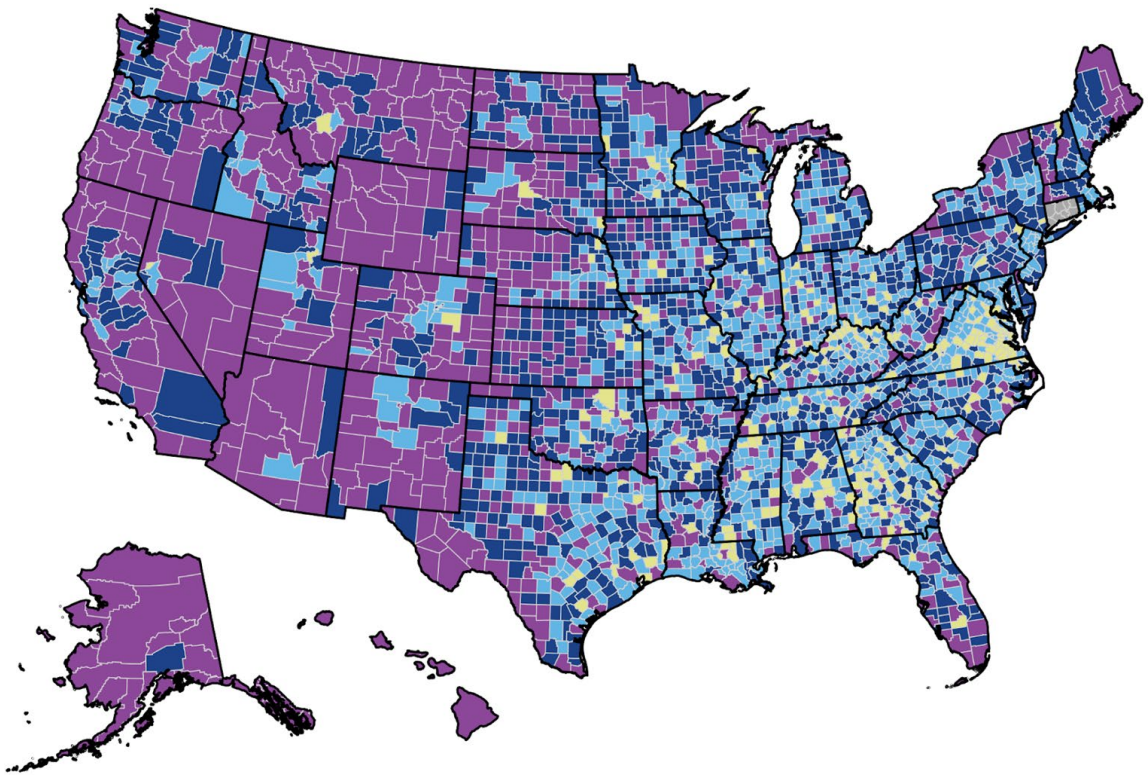
Read the full case study here:

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Mobility Happens Across Employers



Labor markets are local.



73%
of workers live and work in the same county.

22%
of workers work in a county directly neighboring their own.

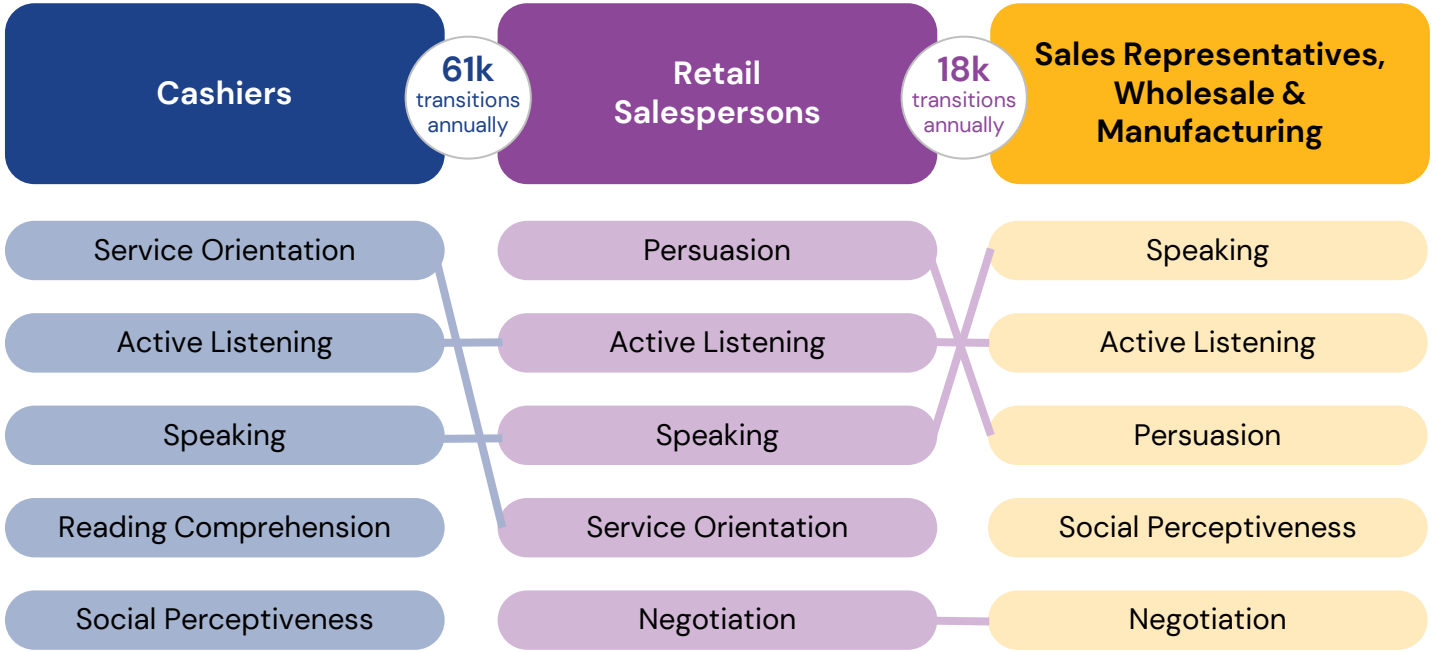
% of Residents Who Work in Same County

- 80 – 100%
- 60 – 80%
- 40 – 60%
- < 40%
- NA

Source: Opportunity@Work analysis of the 2016-2020 5-Year ACS Commuting Flows, Table 1.

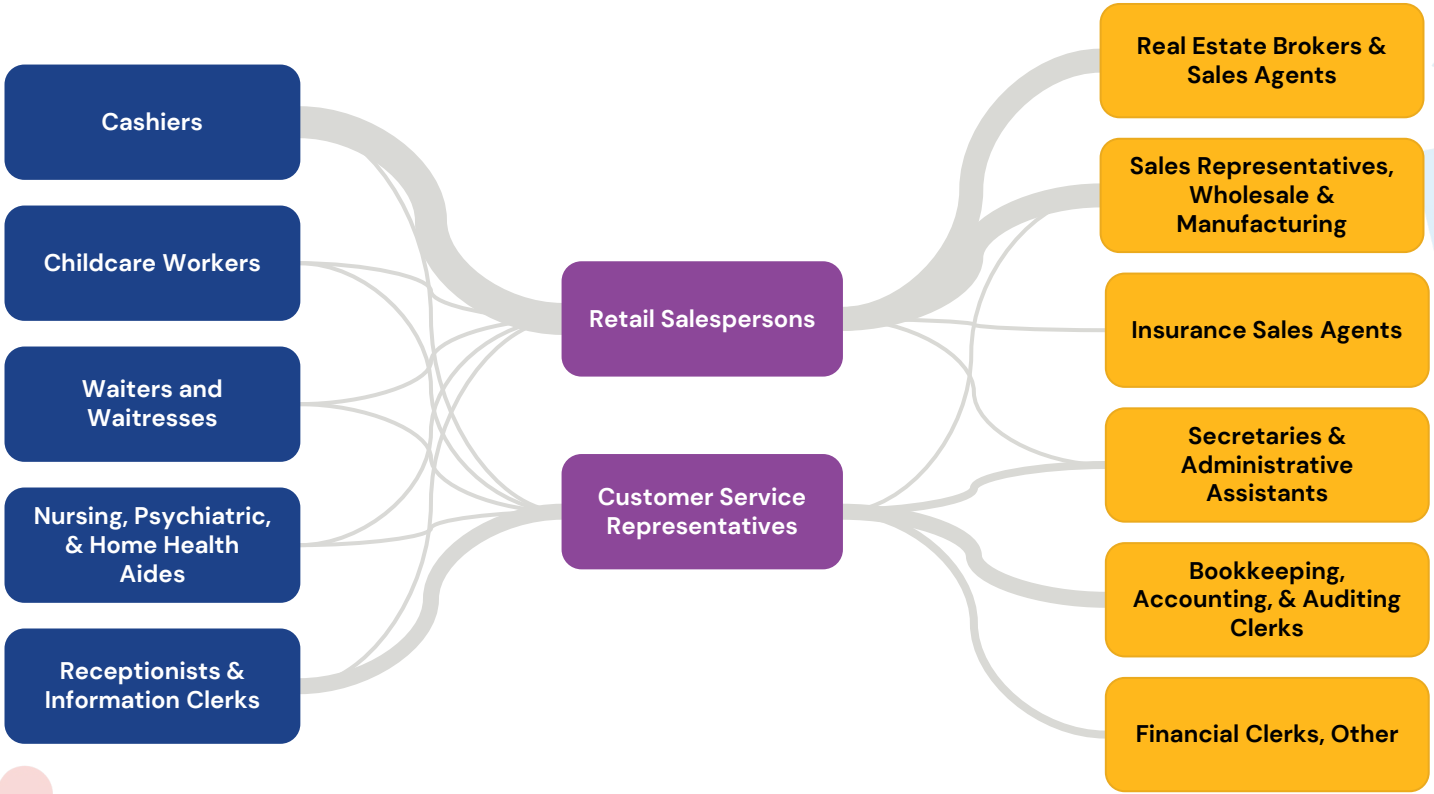
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Employers are developers of STAR talent and engines of mobility.



Source: O@W analysis of the Occupational Information Network (O*NET) 27.3 Database and 2013 to 2023 Current Population Survey, Annual Social and Economic Supplement, IPUMS.

These skills-based transitions add up to job pathways that offer STARs a range of opportunities.



Source: O@W analysis of the Occupational Information Network (O*NET) 27.3 Database and 2013 to 2023 Current Population Survey, Annual Social and Economic Supplement, IPUMS.

In Pittsburgh, a diverse set of large employers produce talent along these pathways.

University of Pittsburgh Medical Center

Lowe's

ALDI

Walmart

Giant Eagle

Rite Aid

St. Clair Hospital

Giant Eagle

Commonwealth of Pennsylvania

Sheetz

Lowe's

TJ Maxx

Macy's

Dollar General

University of Pittsburgh Medical Center

Commonwealth of Pennsylvania

University of Pittsburgh

Trinity Solar

Allegheny Health Network

Carnegie Mellon University

PNC

Source: O@W analysis of the Occupational Information Network (O*NET) 27.3 Database and 2013 to 2023 Current Population Survey, Annual Social and Economic Supplement, IPUMS.

Anchor Institutions Shape Opportunity

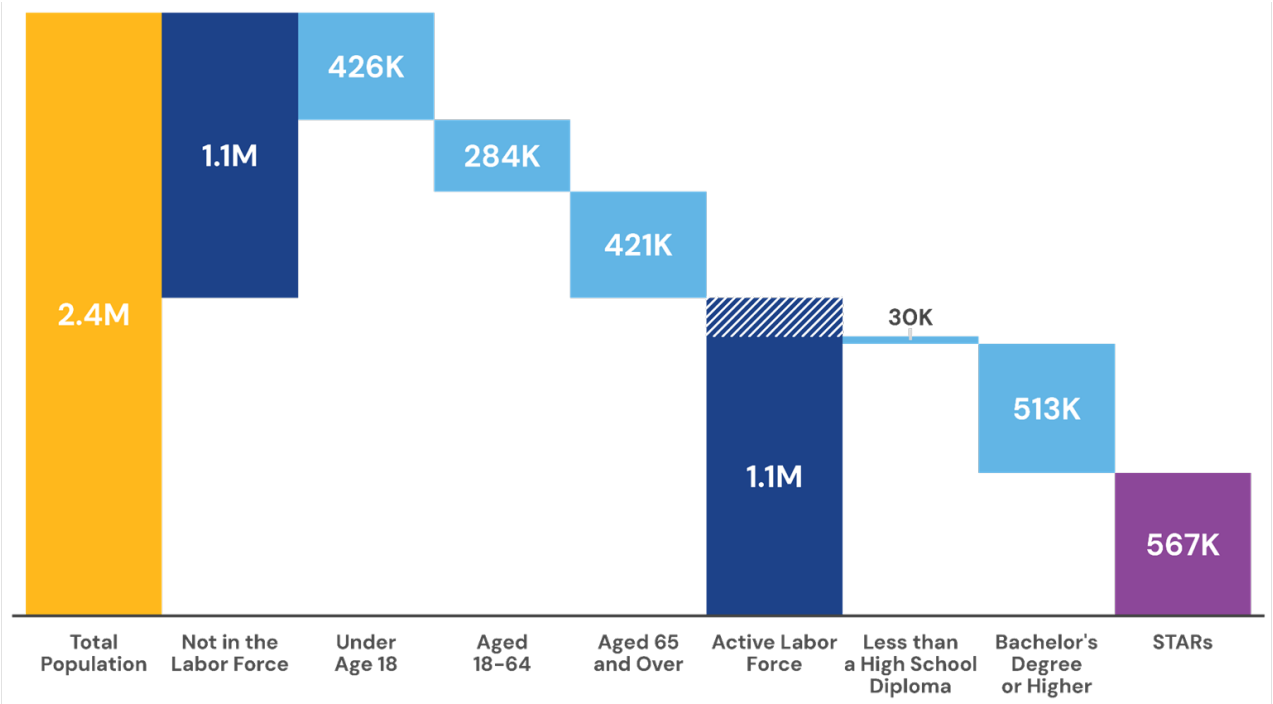


If mobility is built across employers, then the largest employers shape the system.

Pittsburgh Job Posting Rank	Companies Sorted by Postings	Job Postings (2021 - 2025)
1	University of Pittsburgh Medical Center	51,854
3	Giant Eagle	16,991
4	University of Pittsburgh	15,658
10	Aerotek	9,820
14	Dick's Sporting Goods	6,507
17	Lowe's	6,176
18	Dollar General	6,068
48	Thermo Fisher Scientific	2,741
49	Humana	2,699

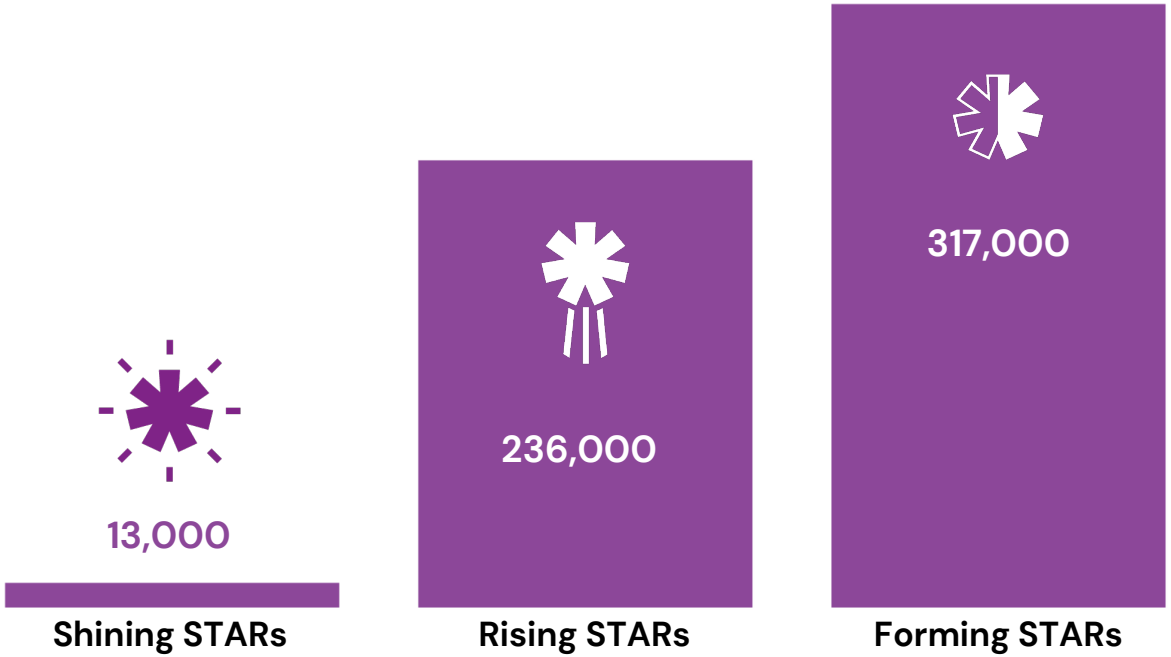
STARs make up almost half of Pittsburgh's labor force

There are an estimated 567K workers Skilled Through Alternative Routes (STARs) to a bachelor's degree in Pittsburgh, comprising 51% of all workers.



*We exclude 153K workers under the age of 25 from our analysis of the labor force to ensure that the majority of the population studied has completed their education.
Source: Opportunity@Work analysis of the 2023 1-year American Community Survey, IPUMS.

41% of Pittsburgh STARs have the skills today for higher-wage work



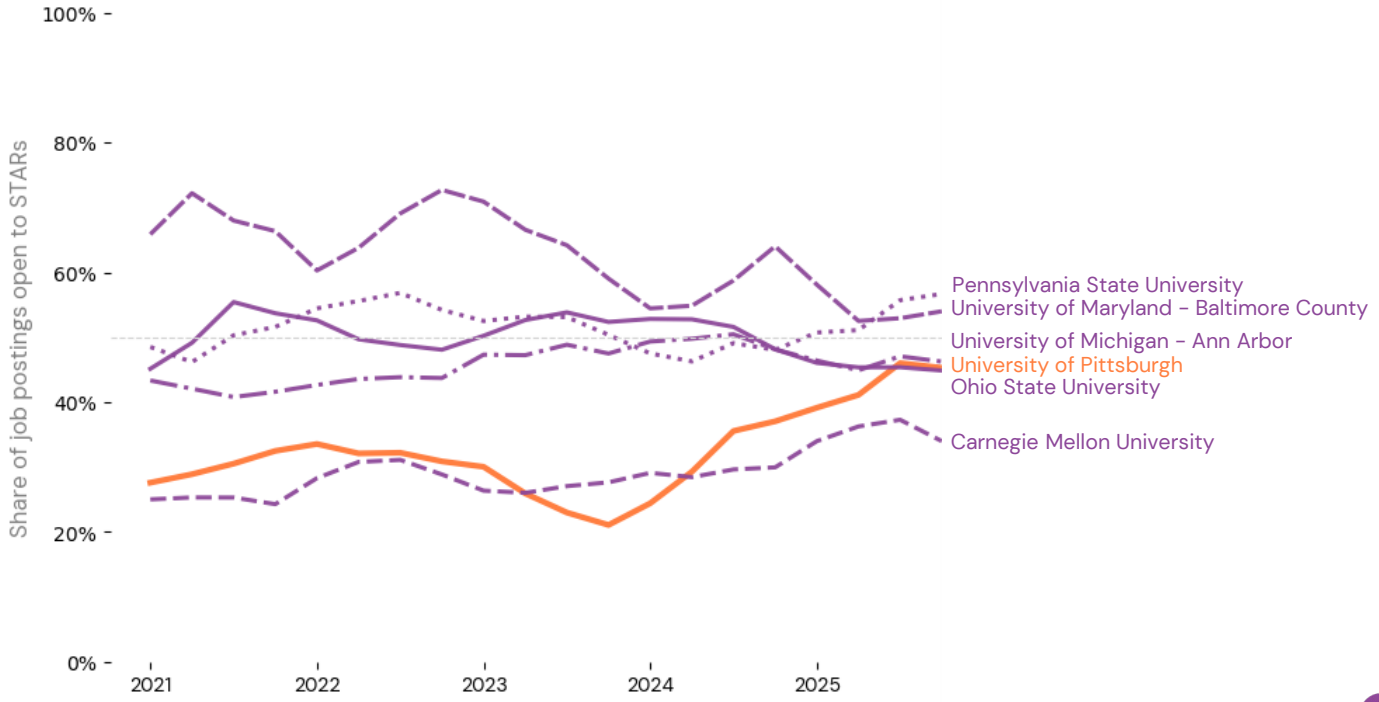
Source: Opportunity@Work analysis of the 2023 1-year American Community Survey, IPUMS.



So what is the University of Pittsburgh doing for STARs?

Opening Doors: Hiring STARs

The share of postings at the University of Pittsburgh open to STARs has risen from 21% in 2023 to more than to 45% as of Fall 2025.

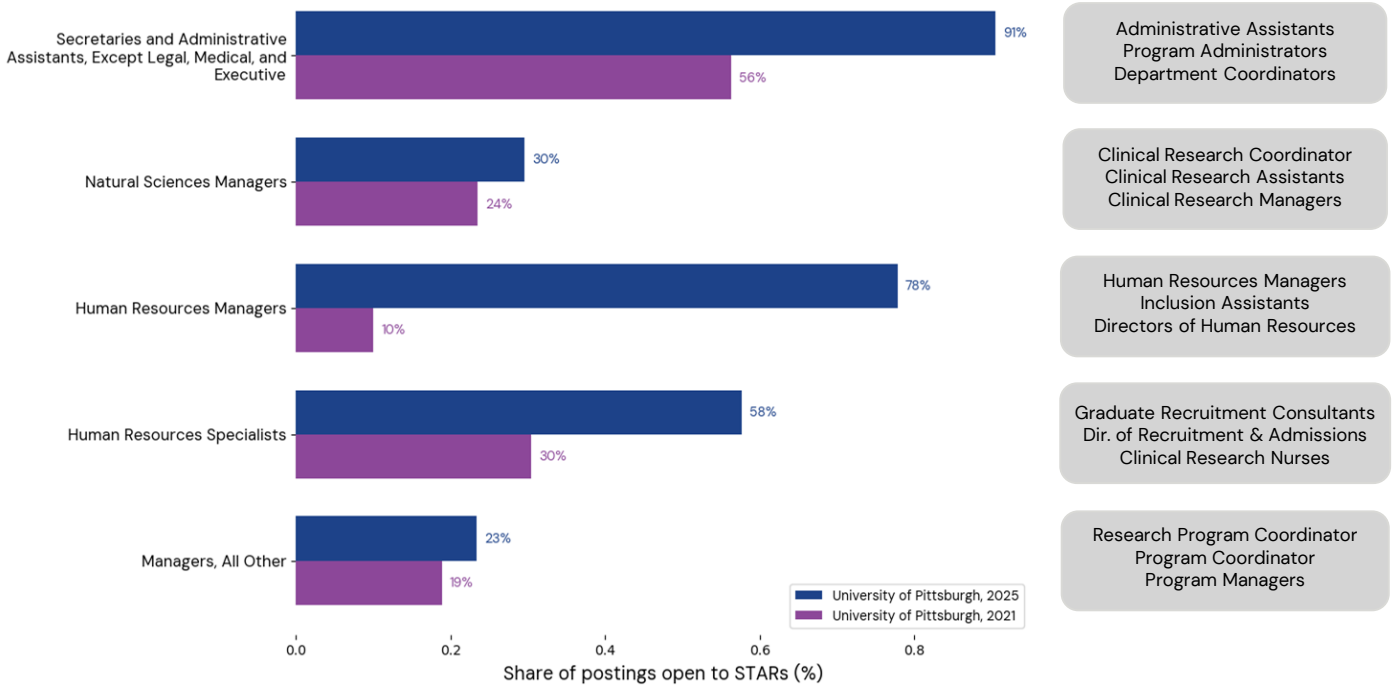


Source: Opportunity@Work analysis of Lightcast job postings data from 2018 - 2025.
Classifications were obtained from The Carnegie Classification of Institutions of Higher Education (2025).

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Opening Doors: Hiring STARs

Five roles at the University of Pittsburgh show the greatest increase in openings to STARs.



Source: Opp@Work analysis of Lightcast job postings data

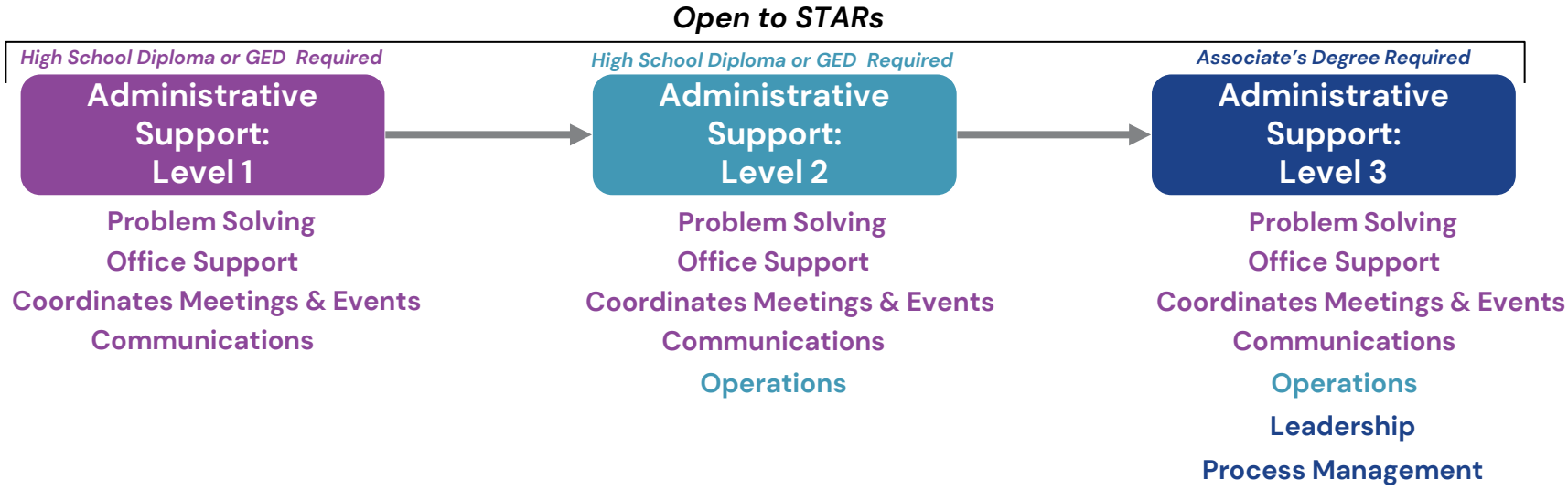
Sorted by count of postings open to STARs

Note: Postsecondary teacher postings were omitted from the list.

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Building Pathways: Developing STAR Talent

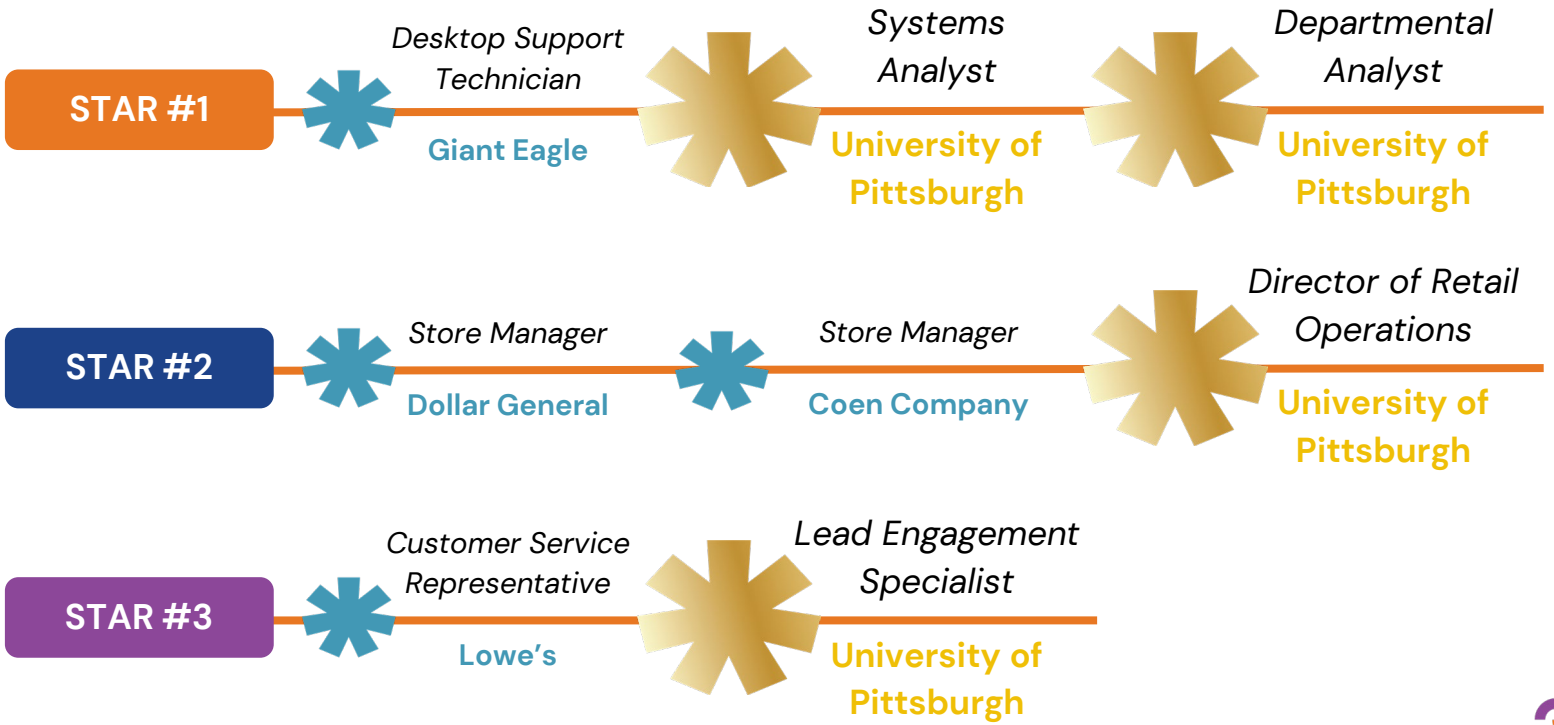
Staff make up more than 57% of workers at the University of Pittsburgh, many of whom are STARs.



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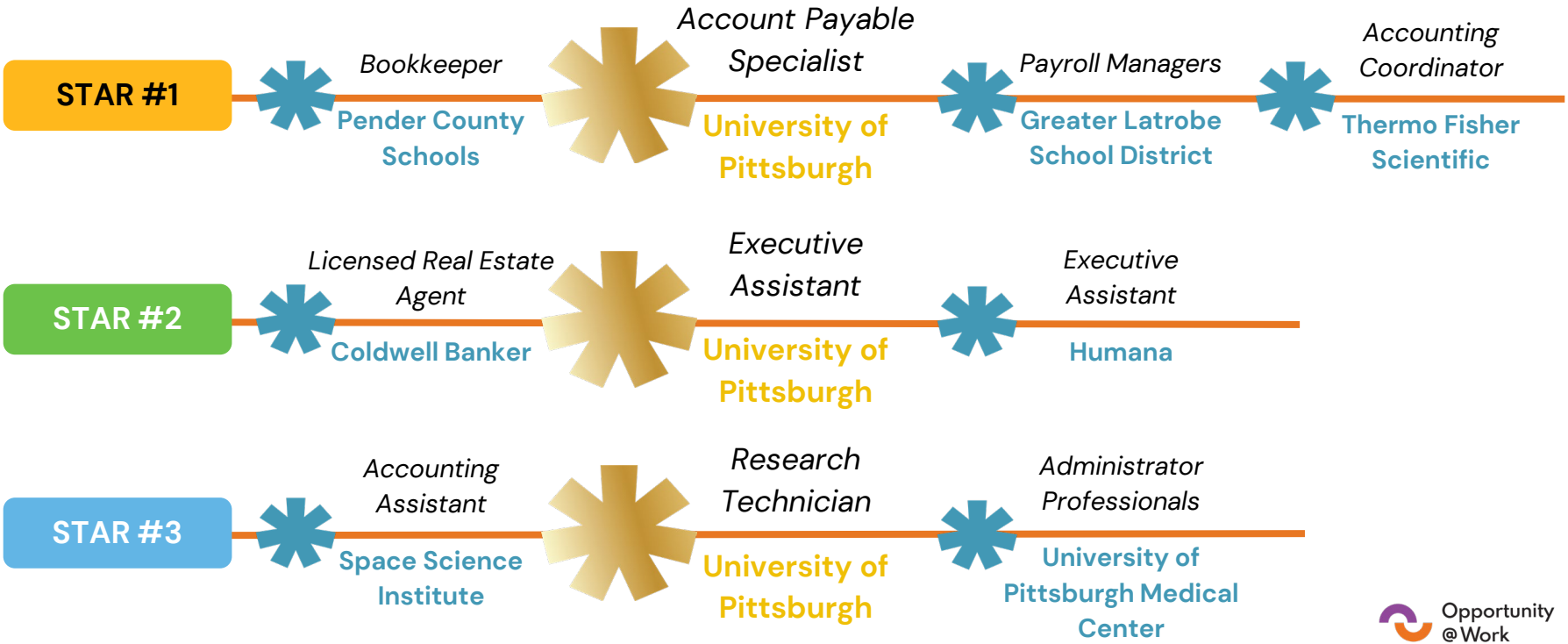
Three example pathways from STAR resumes



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Fueling the Region: Exporting Talent

The University of Pittsburgh produces talent through its role as an employer.



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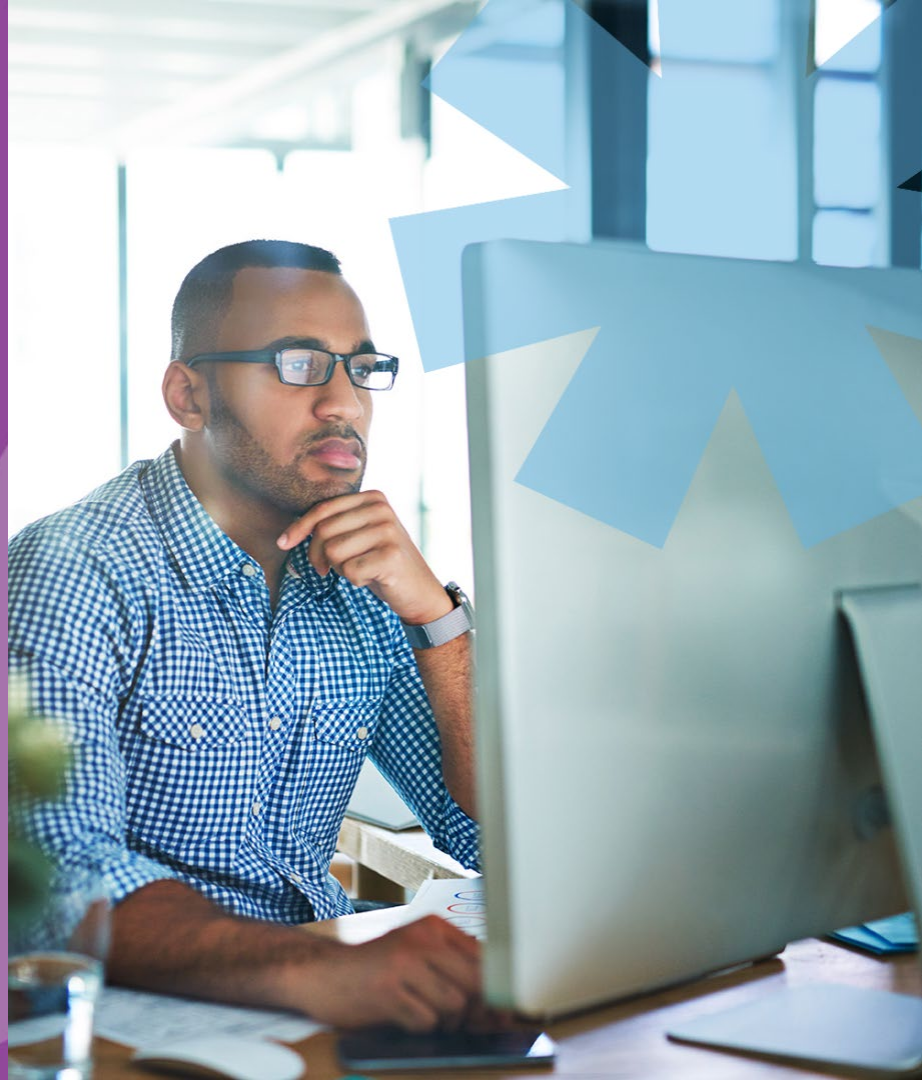
Creating Access: Workforce Training in Action

The University of Pittsburgh **Dental Assistant Training Program** provides opportunities for STARs to move into family-sustaining jobs with benefits and career advancement pathways.



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AI Is Reshaping Mobility



35% of jobs in Pittsburgh are already exposed to generative AI today

AI capacity levels in the Pittsburgh, PA metro area



TALENT	**CS BA**: Number of computer science, engineering, and mathematics graduates	**175,902 graduates**
	CS PhD: Number of computer science, engineering, and mathematics PhD graduates	**2,376 enrolled**
	Profiles: Volume of U.S. worker online profiles with AI skills	**2,706 profiles**
INNOVATION	**Publications**: AI research papers published at top AI conferences	**349 publications**
	Patents: AI patents granted	**211 patent(s)**
	Contracts: Federal R&D contract spending on AI	**9 contract(s)**
	HPC: High performance computing (HPC) usage from academic users through the NSF ACCESS program	**173.9M ACCESS credits**
ADOPTION	**Job Postings**: Number of job postings requiring AI skills	**5,214 postings**
	Firm AI Use: Percentage of firms adopting AI technologies	**3%**
	Firm Data Readiness: Percentage of firms with files in digital format	**24%**
	Firm Cloud Readiness: Percentage of firms adopting cloud based tech	**18%**
	Exposure: Share of jobs in a metro area exposed to generative AI	**35%**
	AI Startups: Number of startups creating AI-driven products	**104 startup(s)**
	VC Funding: Venture capital funding raised by AI startups	**94 VC deal(s)**

Brookings Metro

Universities Shape STAR Mobility

- STARs are critical to the university workforce.
- Many STARs are on pathways to higher-wage work.
- Our staffing decisions determine access to opportunity.
- Our internal pathways build talent for the region.
- We can create more mobility if we choose to.

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Thank You

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