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Informing Skills-based Career Pathways with the Occupational Mobility Explorer

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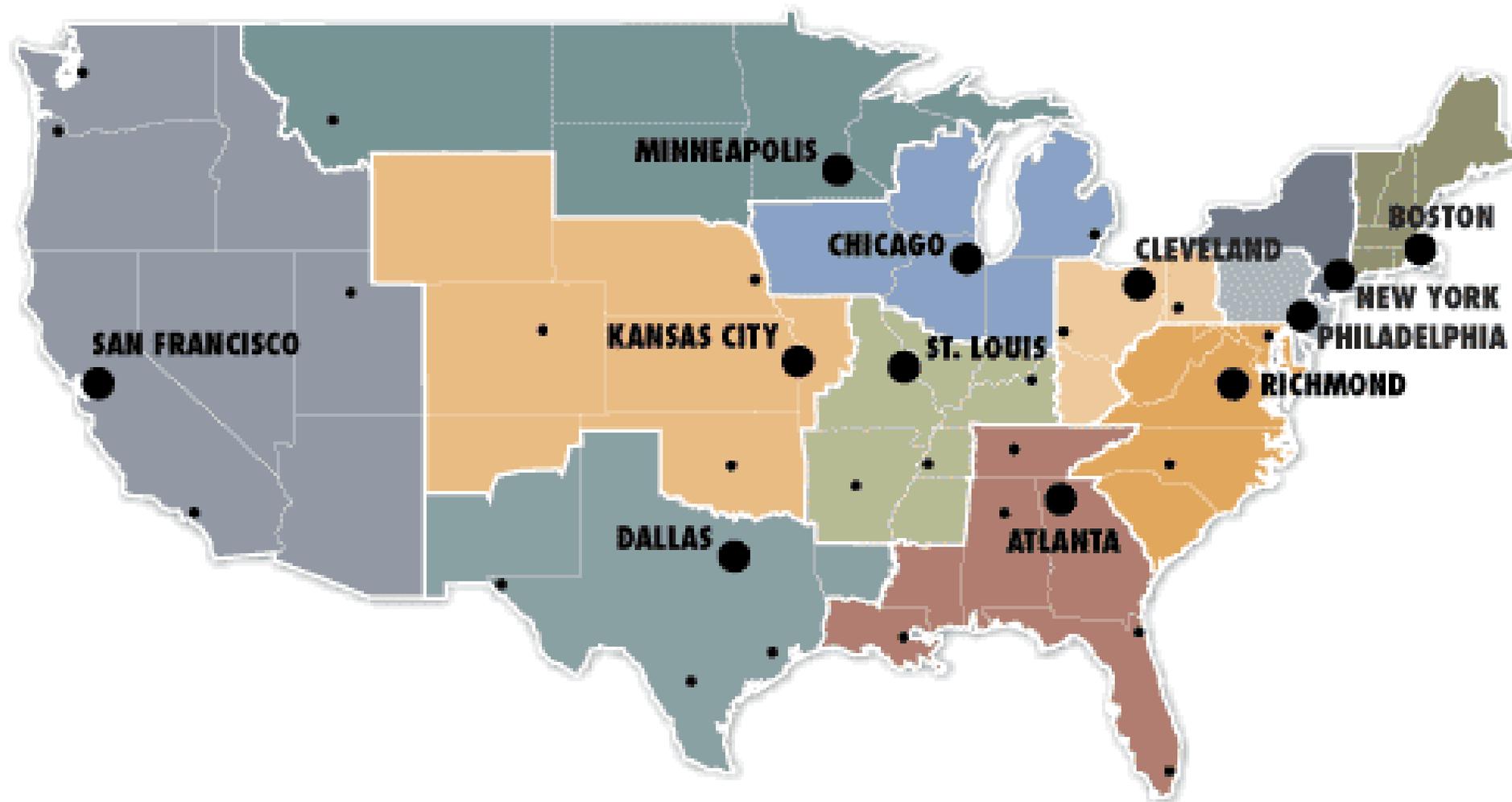
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Agenda

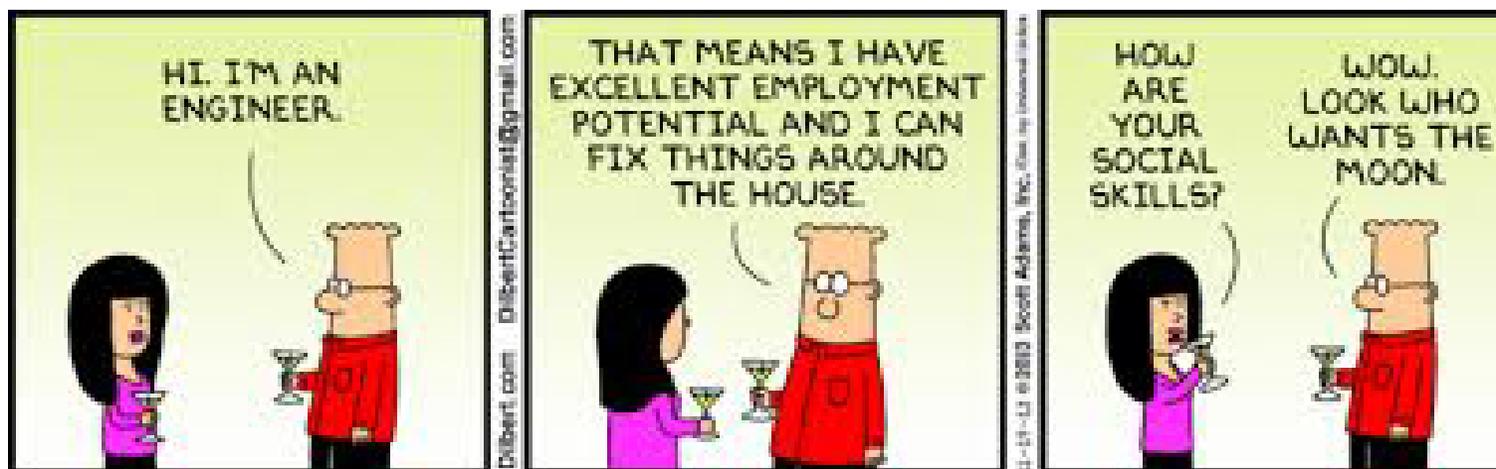
- Fed 101
- Overview of Skills-based Concepts and Approaches
- Occupational Mobility Explorer Live Demo
- Related research
- Q & A

The Federal Reserve System



Foundational Concepts to Skills-Based Approaches

- A job is a bundle of tasks that require a set of skills to complete.
- Better information leads to better outcomes.



Lots of Skills-Based Activity Underway Across the Country

Rethinking educational requirements for jobs.

- “Tear the Paper Ceiling” campaign by Opportunity@Work
- 25 of state governments have adopted skills-based approaches.
- Society of Human Resource Professionals- (SHRM) – Center for a Skills First Future
- Large national companies pursuing skills-based strategies (Walmart, Microsoft)

Individuals signaling skills to potential employers.

- Curated online profiles
- Peer endorsements.

Rethinking approaches to career counseling and exploration.

Enhancing connections between the educational system and business world.

- Standardizing in demand skills with employers.
- Commitments to learning and development by individuals and employers.
- Branded career exploration activities.

Why Should a Region or State Consider Skills-based Approaches?

- Dual workforce problem
- Workforces make regions grow, especially consumer-based economies.
- Demographics, (im)migration, and locations are strong external forces.
- The many dimensions of job quality.

Skills-based approaches are relevant for school superintendents because...

Economic mobility and opportunity

Rise of nondegree credentials & Workforce Pell

Career Connected Learning

SB 328

College wage premium declining

College ROI

AI and the Future of Work

“National Association of Colleges and Employers survey found that 70% of employers now use skills-based hiring, up from 65% a year ago. In 2019, nearly three-quarters of employers screened candidates by GPA; this year, just 42% do.”

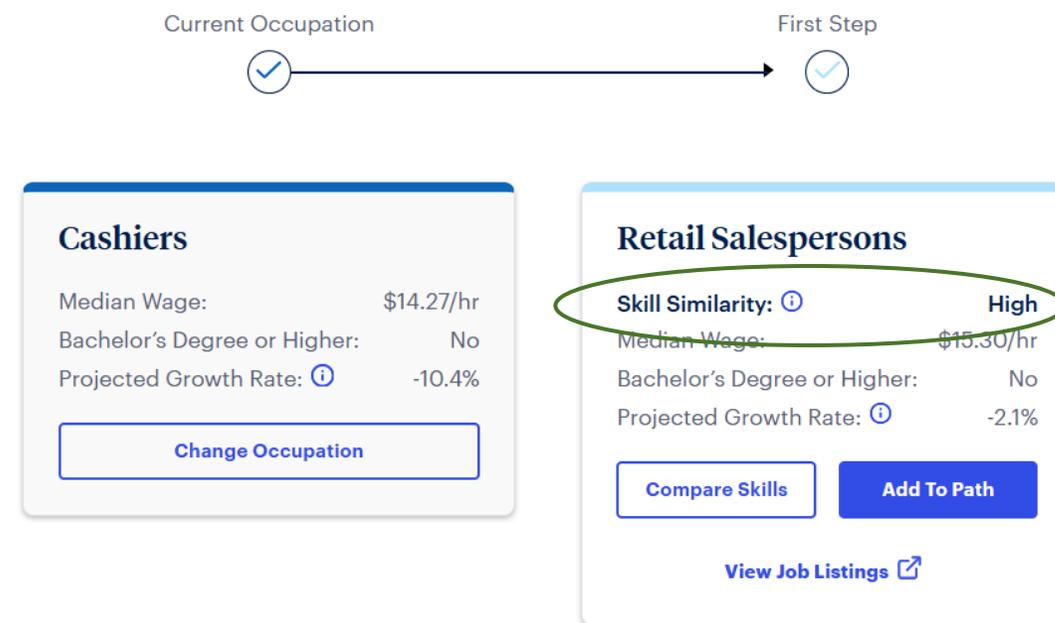
What Is the Occupational Mobility Explorer?

- The Occupational Mobility Explorer (OME) is an interactive tool that allows users to explore career paths and visualize how overlapping skillsets can facilitate upward mobility from lower-paying to higher-paying jobs in over **500 US locations** and across **600+ job titles**.
- A “career navigation system” that combines public and proprietary labor market data.
 - The 2023 occupation-specific information (wage, location, and projections) is from the Bureau of Labor Statistics.
 - Top 25 skills requested by employers in online job ads for each occupation; 2,300+ unique skills representing employer demand (Lightcast).
 - Some of the occupation connections are obvious (e.g., licensed practical nurse to registered nurse), others less so (e.g., motorboat mechanics to industrial engineering technologist).

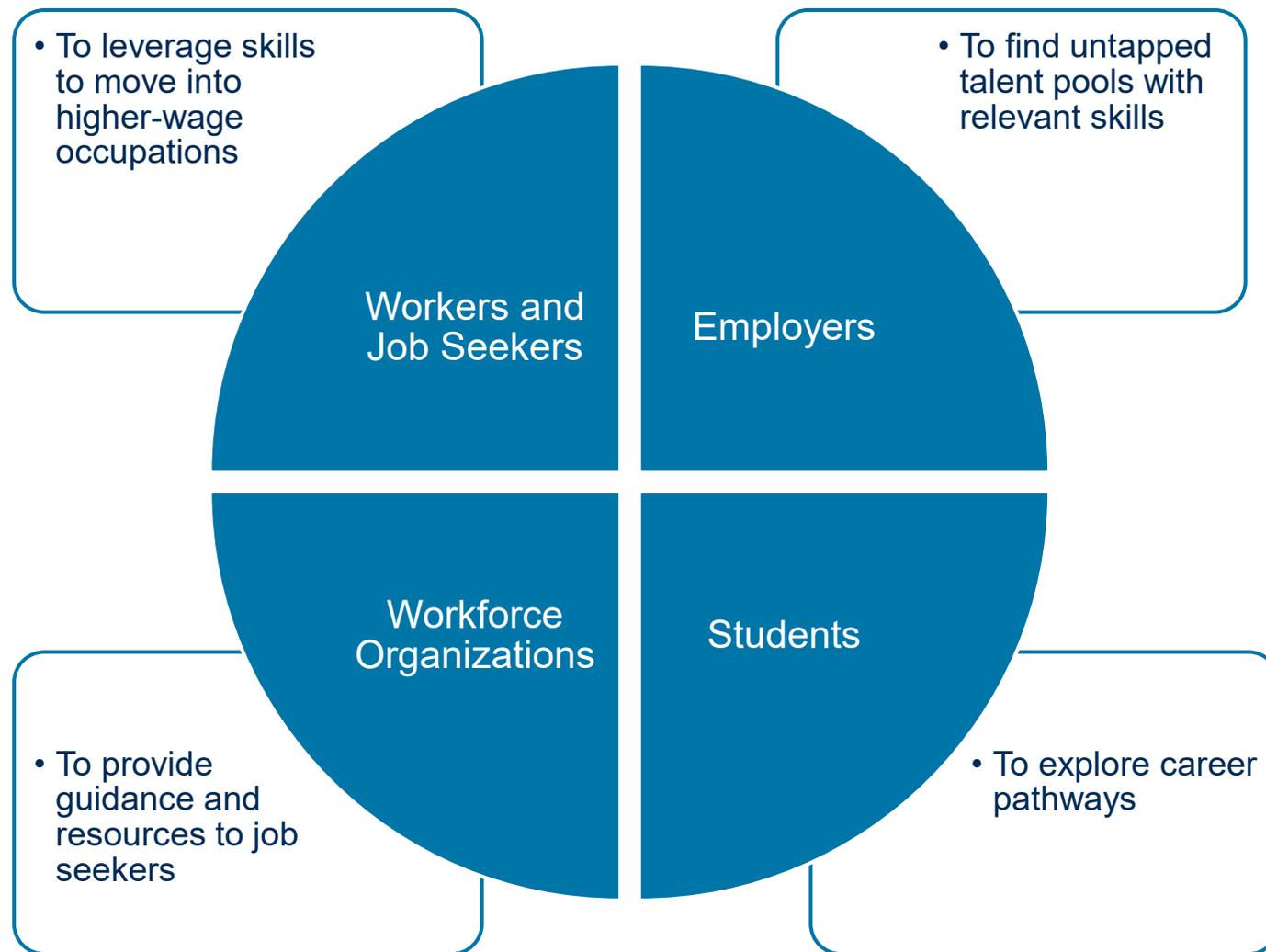
How Does the OME Work?

- Each pair of occupations has a similarity score, which ranges from 0 to 1 based on the degree of overlap and the skill intensity of a pair's top 25 skills.
- In the tool, we classify skill similarity scores for each pair of occupations as high, medium, and low.
- Tool presents the 10 higher- (or lower-)paying occupations with the highest skill similarity score for each occupation.

Figure 1. Skill Similarity Example from the OME



Key Audiences

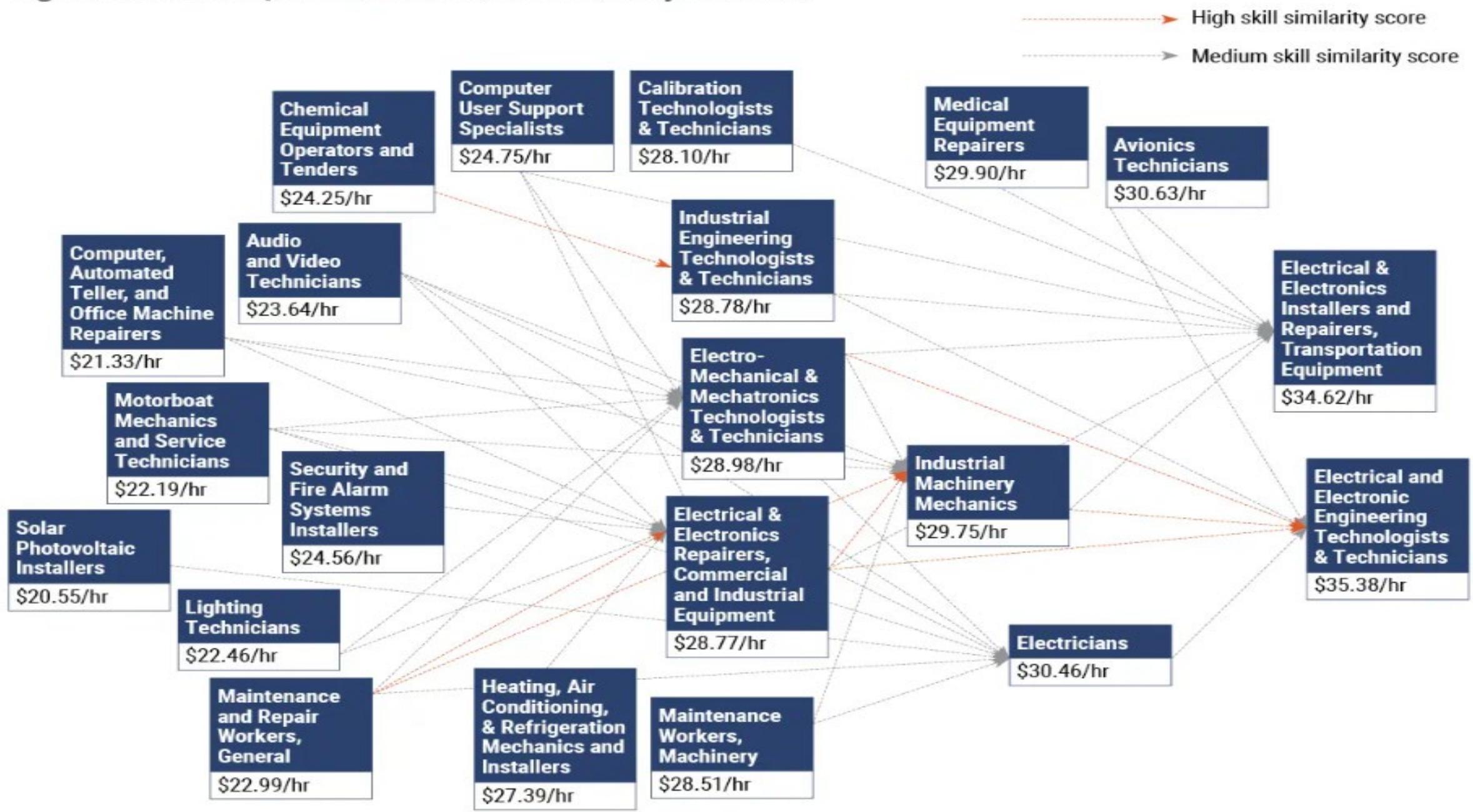


The Occupational Mobility Explorer



www.philadelphiafed.org/ome

Figure 2. Microchip Production Career Pathways in Ohio



Source: Occupational Mobility Explorer

Occupation Skill Profiles

□ Common skills ■ Baseline pathway-specific skills ■ Specialized skills

Median hourly wage: \$22.99		Median hourly wage: \$28.77		Median hourly wage: \$29.75		Median hourly wage: \$35.38	
Maintenance & repair workers, general*		Electrical & electronics repairers, commercial & industrial equipment**		Industrial machinery mechanics*		Electrical & electronic engineering technologists & technicians***	
Skill	%	Skill	%	Skill	%	Skill	%
Troubleshooting	39.0	Troubleshooting	61.9	Troubleshooting	45.3	Troubleshooting	63.7
Plumbing	32.7	Communication	29.3	Communication	25.0	Communication	31.0
Communication	26.6	Machinery	22.7	Operations	22.2	Programmable logic controllers	23.4
HVAC	23.8	Preventive maintenance	21.8	Industrial repair, maintenance	20.5	Automation	23.0
Preventive maintenance	23.3	Electrical wiring	18.4	Machinery	20.4	Electrical wiring	19.4
Customer service	21.6	Hydraulics	17.3	Lifting ability	17.6	Operations	18.3
Carpentry	20.0	Customer service	16.9	Customer service	16.8	Electromechanics	18.0
Painting	19.3	Problem solving	16.9	Preventive maintenance	16.7	Hand tools	17.3
Lifting ability	18.8	Management	16.8	Hydraulics	16.5	Problem solving	16.3
Machinery	17.7	Blueprinting	16.5	Management	16.3	Instrumentation	15.6
Operations	17.2	Industrial repair, maintenance	15.9	Problem solving	13.5	Electrical systems	15.0
Management	15.8	Lifting ability	15.7	Hand tools	13.4	Electronics	14.5
Hydraulics	14.8	Electronics	15.6	Field service management	13.3	Machinery	14.2
Power tool operation	13.5	Operations	14.7	Mechanical aptitude	12.4	Test equipment	13.7
Problem solving	13.1	Programmable logic controllers	14.7	Power tool operation	12.2	Customer service	13.6
Hand tools	12.8	Computer literacy	14.3	Blueprinting	11.6	Computer literacy	13.2
Detail oriented	10.7	Electrical systems	13.6	Housekeeping	9.9	Management	12.8
Programmable logic controllers	10.3	Power tool operation	13.0	Detail oriented	9.8	Lifting ability	12.7
Facility repair & maintenance	9.8	Hand tools	12.9	Welding	9.5	Blueprinting	12.3
Drywall (installation & repair)	9.5	Plumbing	11.9	Production equipment	8.9	Preventive maintenance	12.2
Good driving record	9.5	HVAC	11.3	Programmable logic Controllers	8.5	Hydraulics	11.5
Self-motivation	9.4	Production equipment	11.0	Computer literacy	8.4	Electronic components	11.3
Field service management	9.2	Equipment repair	10.6	Self-motivation	8.3	Microsoft Office	11.2
Blueprinting	9.1	Microsoft office	10.2	Machining	8.2	Power tool operation	11.1
Computer literacy	9.1	Test equipment	10.2	Forklift truck	8.2	Control systems	10.9

FEDERAL RESERVE BANK of *Chicago* Source: Occupational Mobility Explorer

* High school diploma or equivalent typically required ** Postsecondary nondegree award typically required *** Associate's degree typically required

Top Employer-Requested Skills by Wage Quartile, 2021-2023

	First quartile (average hourly wage: \$15.87)		Second quartile (\$19.74)		Third quartile (\$28.21)		Fourth quartile (\$50.91)	
	Skill	% of job ads	Skill	% of job ads	Skill	% of job ads	Skill	% of job ads
1	Customer service	40.4%	Customer service	36.6%	Communication	35.5%	Communication	37.6%
2	Communication	29.1%	Communication	33.3%	Customer service	26.8%	Management	29.3%
3	Sales	22.6%	Management	19.3%	Management	20.9%	Leadership	21.2%
4	Management	17.3%	Sales	15.1%	Sales	16.4%	Operations	17.0%
5	Merchandising	16.0%	Operations	14.6%	Operations	14.8%	Customer service	15.0%
6	Lifting ability	14.5%	Detail-oriented	13.8%	Detail-oriented	12.3%	Problem-solving	14.8%
7	Cleanliness	12.6%	Lifting ability	11.0%	Leadership	10.9%	Planning	14.1%
8	Restaurant operation	11.8%	Warehousing	10.3%	Problem-solving	10.2%	Writing	11.5%
9	Detail-oriented	10.6%	Merchandising	8.6%	Writing	9.8%	Project management	10.7%
10	Operations	8.1%	Computer literacy	8.6%	Microsoft Office	7.9%	Nursing	10.6%
11	Sanitation	8.0%	Problem-solving	8.2%	Microsoft Excel	6.9%	Sales	10.1%
12	Housekeeping	7.4%	Leadership	7.9%	Marketing	5.8%	Detail-oriented	9.7%
13	Selling techniques	7.0%	English language	7.2%	Multitasking	5.7%	Microsoft Excel	8.3%
14	Multitasking	6.8%	Multitasking	6.0%	Planning	5.6%	Research	7.8%
15	Cash register	5.9%	Forklift truck	5.5%	Troubleshooting	5.2%	Microsoft Office	6.9%

Key Takeaways

- Skills-based approaches hold promise for individual economic mobility while meeting the talent needs of employers.
- The OME is a tool to facilitate conversations about skills-based approaches with students, parents, educators and trainers, jobseekers, employers, economic and workforce development professionals, and funders.
- The OME is another resource to use for local workforce development/labor market analysis.

Questions?

www.philadelphiafed.org/ome



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