

# Connecting Communities



## Exploring a Skills-Based Approach to Occupational Mobility

June 25, 2020

*Organized by the Federal Reserve Bank of St. Louis*

# Welcome

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**Keith Wardrip**  
Federal Reserve Bank of  
Philadelphia



**Kyle Fee**  
Federal Reserve Bank of  
Cleveland



**Marta Urquilla**  
Education Design Lab

## Agenda for this webinar

New Research on the  
Transferability of  
In-Demand Skills



Practical Applications in  
Communities



Designing Micro-Pathways to  
Opportunity Occupations

Join

- Call-in number **888-625-5230**
- Conference Code: **508 590 72#**
- Webinar link: <https://www.webcaster4.com/Webcast/Page/584/35255>

Questions

- Email us at: [communities@stls.frb.org](mailto:communities@stls.frb.org).
- Type your question into the chat box of the webinar

Website

- Please visit <https://bsr.stlouisfed.org/connectingCommunities>

The **Connecting Communities**<sup>®</sup> audio conference series is a Federal Reserve System initiative intended to provide timely information on emerging and important community and economic development topics with a national audience. The audio conference series complements existing Federal Reserve Community Development outreach initiatives that are conducted through our regional Reserve Bank offices and at the Federal Reserve Board of Governors in Washington, D.C.

# Legal Notices and Disclaimer

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**The information, analyses, and conclusion set forth are those of the presenters and do not necessarily indicate concurrence by the Board of Governors of the Federal Reserve System, the Federal Reserve Banks, or members of their staffs.**

# Community Development

The mission of the Federal Reserve’s community development function is to promote the economic resilience and mobility of low- to moderate-income and underserved individuals and communities.



***Occupational Mobility:  
New Research on the Transferability of In-Demand Skills***



**Keith Wardrip**

*Community Development Research  
Manager*

Federal Reserve Bank of Philadelphia



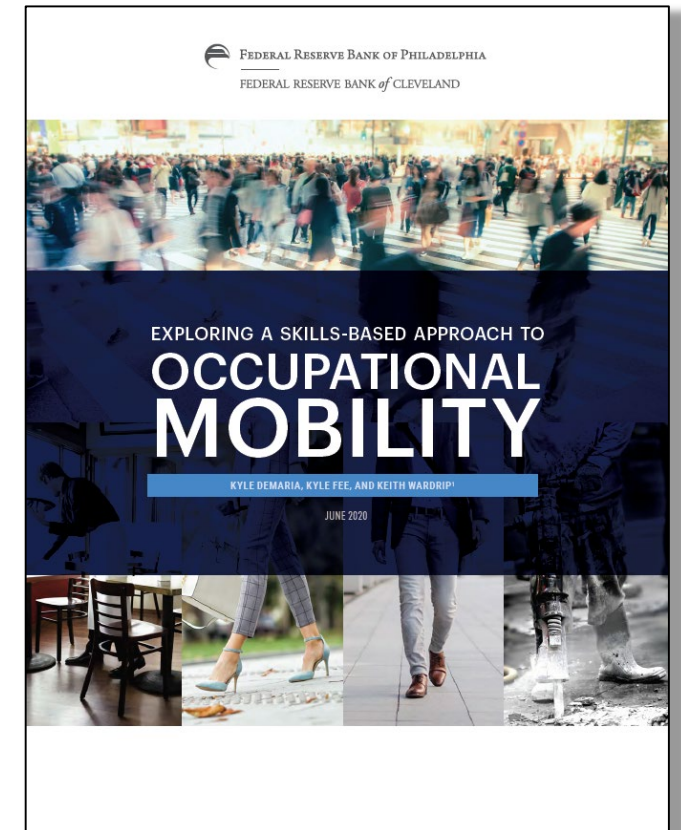
# The labor market offers some economic opportunity for non-college workers.



- Opportunity employment — defined as employment accessible to workers without a bachelor’s degree and typically paying above the national annual median wage — accounts for 21.6 percent of total employment.
- Some of the largest opportunity occupations, including a number in healthcare and the skilled trades, are expected to experience above-average growth in the coming years.

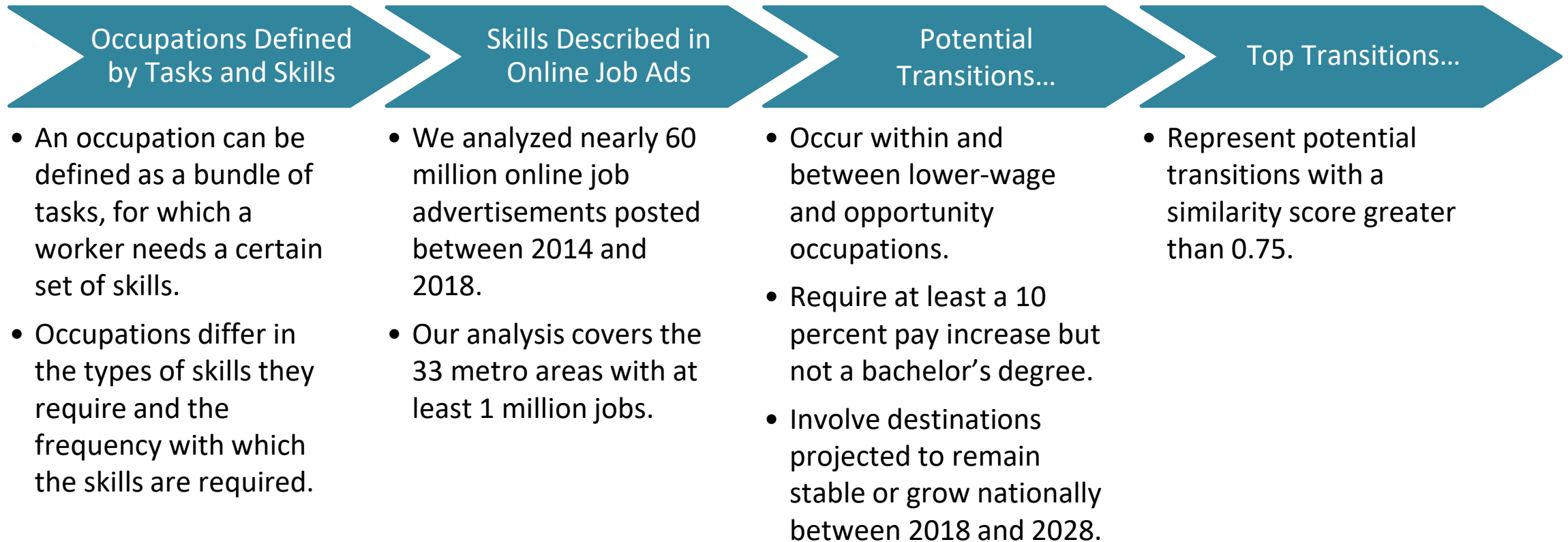
Source: Fee, Kyle, Keith Wardrip, and Lisa Nelson. *Opportunity Occupations Revisited: Exploring Employment for Sub-Baccalaureate Workers Across Metro Areas and Over Time*. Federal Reserve Banks of Philadelphia and Cleveland, 2019.

# However, there are persistent and historical challenges to economic mobility.





# Our guiding principles, data, and methods



# Skills can be viewed as a bridge rather than as a gap.

- Overall, we find a high degree of similarity between the skills required for lower-wage occupations and the skills required for opportunity occupations.

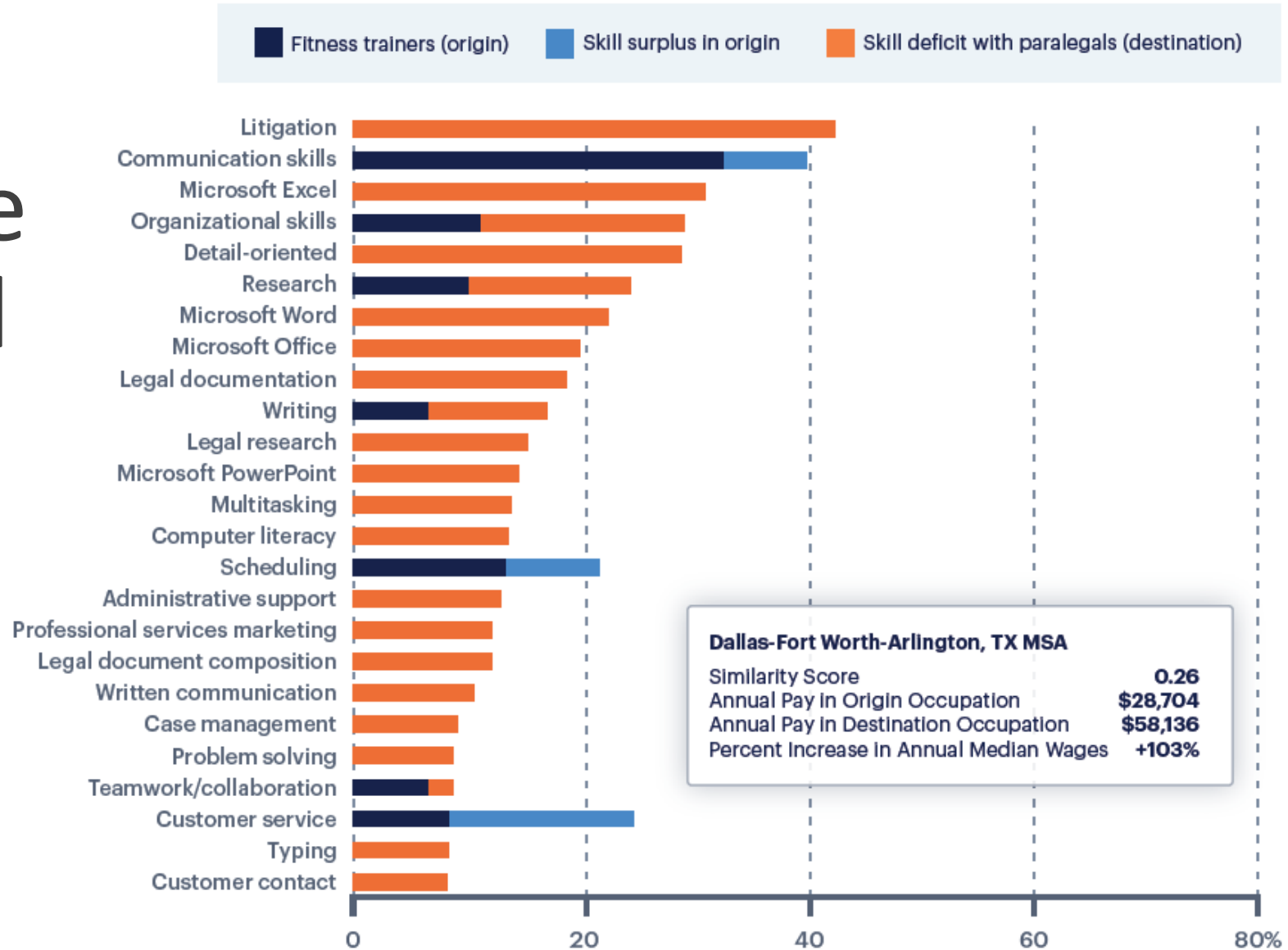
Skill	Overall intensity	Rank		
		Overall	Lower-wage occupations	Opportunity occupations
Communication skills	26.9%	1	1	1
Customer service	17.7%	2	2	3
Physical abilities	14.3%	3	3	8
Organizational skills	13.1%	4	4	4
Teamwork/collaboration	11.8%	5	9	10
Scheduling	10.9%	6	7	6
Detail-oriented	10.2%	7	8	13
Sales	9.9%	8	6	9
Microsoft Excel	9.4%	9	16	5
Computer literacy	9.3%	10	11	7
Problem solving	8.8%	11	18	11
Writing	8.7%	12	14	15
Repair	8.4%	13	13	2
English	8.0%	14	10	21
Microsoft Office	7.7%	15	23	12
Planning	7.7%	16	36	14
Cleaning	7.0%	17	5	54
Building effective relationships	6.7%	18	19	17
Teaching	6.4%	19	30	64
Research	6.1%	20	47	19

Note: Ranks ≤10 shaded dark orange; ranks >30 shaded light orange.

Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# The vast majority of potential transitions involve very different skill sets...

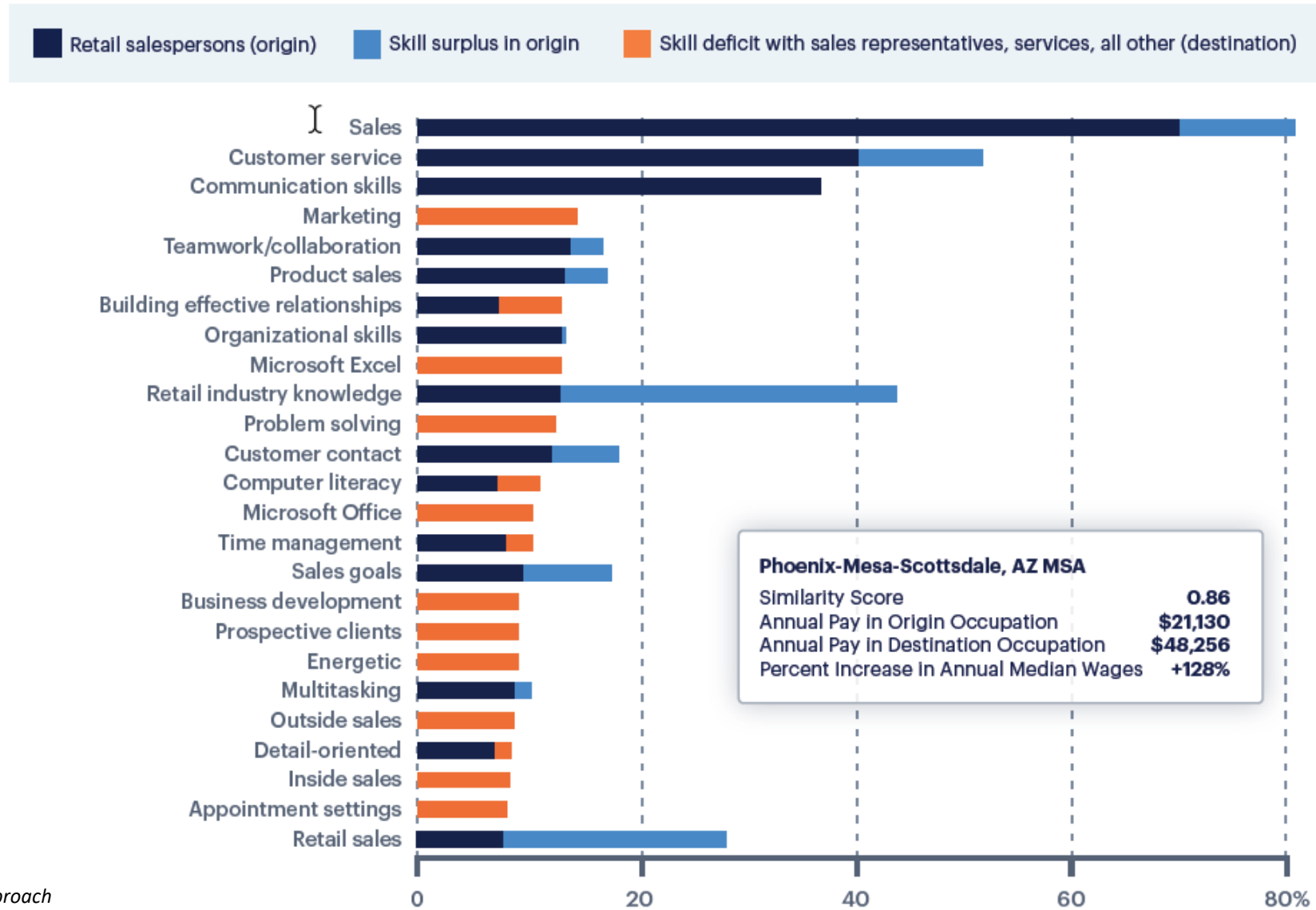
- The average similarity score for the roughly 685,000 potential transitions analyzed is 0.25.



Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# ...but top transitions exist in every metro area.

- In the 33 metro areas analyzed, we find 4,097 top transitions (similarity score >0.75).

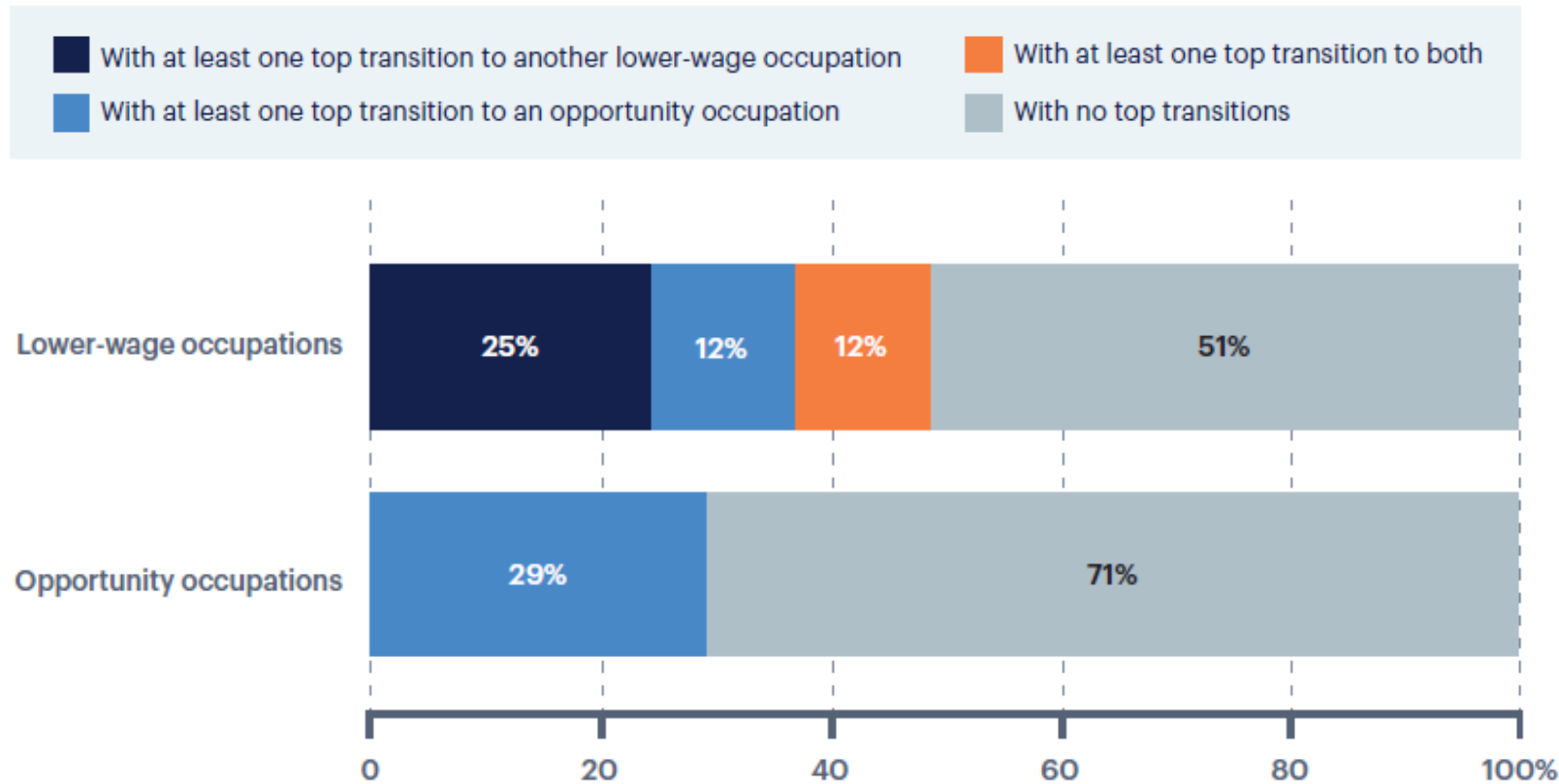


Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Nearly half of lower-wage employment can be paired with a top transition.

- The same is true for 29 percent of the jobs classified as opportunity occupations.

Share of Employment by Type of Top Transition



Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.



# Top transitions can represent substantial wage gains.

Type of transition	AVERAGE ANNUAL MEDIAN WAGES			
	Origin occupations	Destination occupations	Increase	Percent increase
Lower-wage occupation to lower-wage occupation	\$21,508	\$28,367	\$6,859	32%
Lower-wage occupation to opportunity occupation	\$28,547	\$50,672	\$22,125	78%
Opportunity occupation to opportunity occupation	\$53,426	\$76,128	\$22,703	42%
<b>Overall</b>	<b>\$30,100</b>	<b>\$44,974</b>	<b>\$14,873</b>	<b>49%</b>

## MOST COMMON TOP TRANSITIONS BY TYPE

### Lower-wage occupation to lower-wage occupation

Origin occupation	Destination occupation
Retail salespersons	Counter and rental clerks
Dining room and cafeteria attendants and bartender helpers	Dishwashers
Locker room, coatroom, and dressing room attendants	Janitors and cleaners, except maids and housekeeping cleaners

### Lower-wage occupation to opportunity occupation

Origin occupation	Destination occupation
Retail salespersons	First-line supervisors of non-retail sales workers
Retail salespersons	Sales representatives, services, all other
Counter and rental clerks	Sales representatives, services, all other

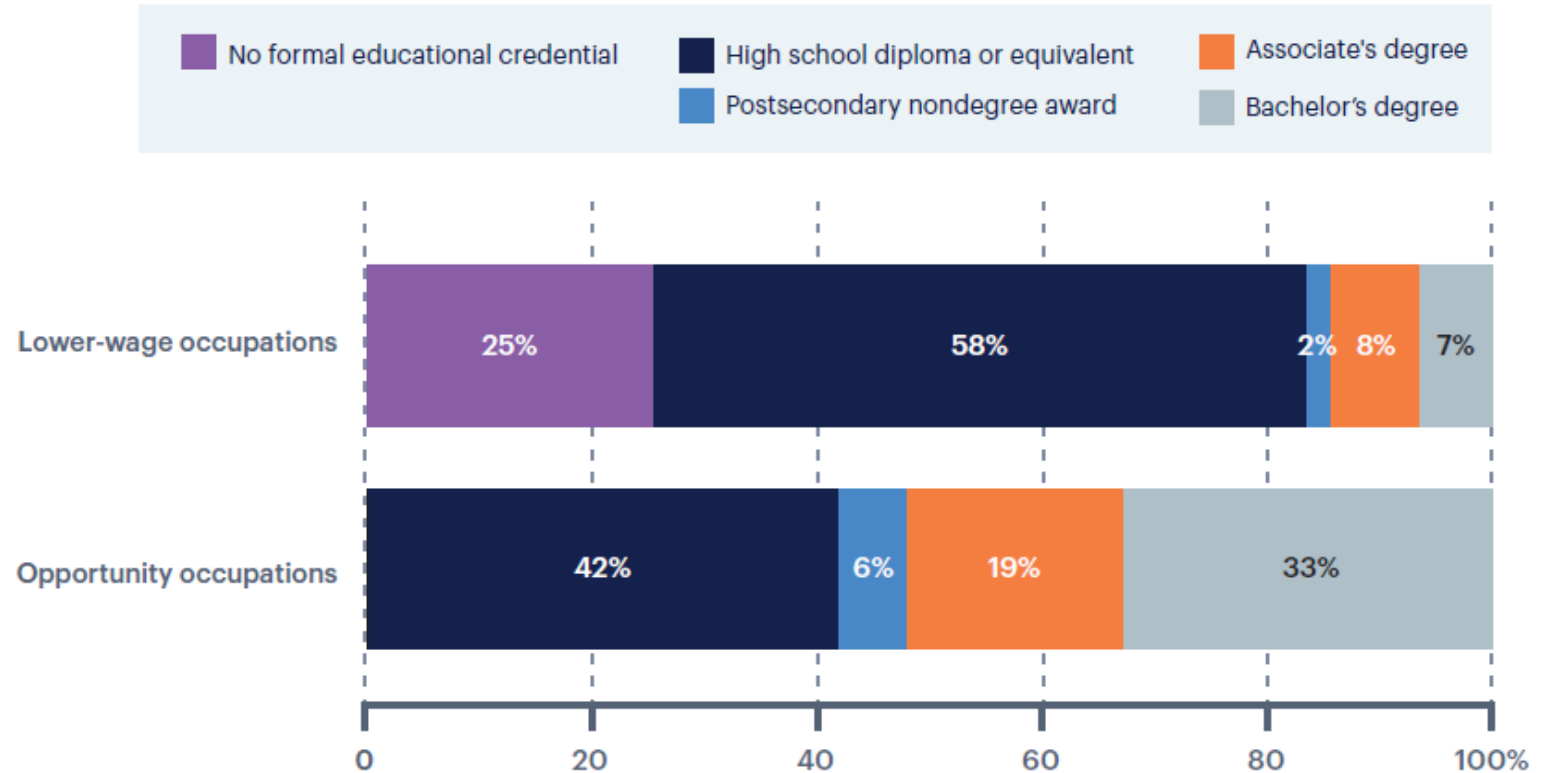
### Opportunity occupation to opportunity occupation

Origin occupation	Destination occupation
First-line supervisors of office and administrative support workers	Administrative services managers
Computer user support specialists	Computer network support specialists
Sales representatives, services, all other	First-line supervisors of non-retail sales workers

Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

Some destination occupations are commonly associated with a bachelor's degree.

Share of Top Transitions by Bureau of Labor Statistics Entry-Level Education of the Destination



Source: DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Strategies to improve economic mobility and help meet the needs of employers

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- Skills-based hiring practices could expand hiring pools to include workers who do not have a bachelor's degree – but who do have many of the skills required to do the job.
- Targeted training could provide otherwise qualified workers with the skills necessary to make a successful transition.
- Collaboration between employers, education providers, and workforce development organizations can ensure training meets local demand.

# *Occupational Mobility: Practical Applications in Communities*



**Kyle Fee**

*Senior Policy Analyst*

Federal Reserve Bank of Cleveland

# Practical Application

Use two local workforce development challenges to illustrate how a skills-based strategy can be used in practice

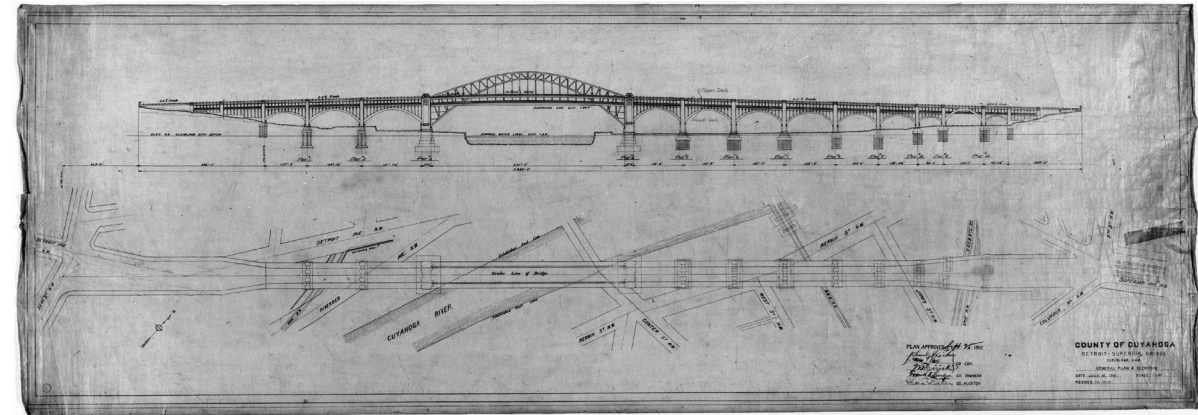
1. Filling in-demand, hard-to-fill, or locally important occupations
2. Post-COVID-19 job change for hard-hit occupations

## Pros

- Way to get real-time local employer input
- Many practitioners already use online job ads data
- Potential to be customizable
- Potential to be pro-equity

## Cons

- Status quo
- Assumptions
  - Jobholder/seeker possesses all of the skills found in an occupation
  - Skills in online job ads are comprehensive and complete
- Broad-based buy-in is necessary
- Some technical assistance may be required



Source: [historicbridges.org](https://historicbridges.org)



# Application #1 in the Cincinnati, OH MSA

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## Step 1: Identify target occupation: **Computer Network Support Specialist**

- Expected to grow 6.4% from 2018 to 2028 (Bureau of Labor Statistics)
- Typical entry level education needed is an associate's degree (BLS)
- Annual wage: \$56,200 (BLS)

## Step 2: Identify lower-paying occupations with high similarity scores to target.

## Step 3: Design a training curriculum to address skill deficits.



Source: Bureau of Labor Statistics

# Application #1: Step 2

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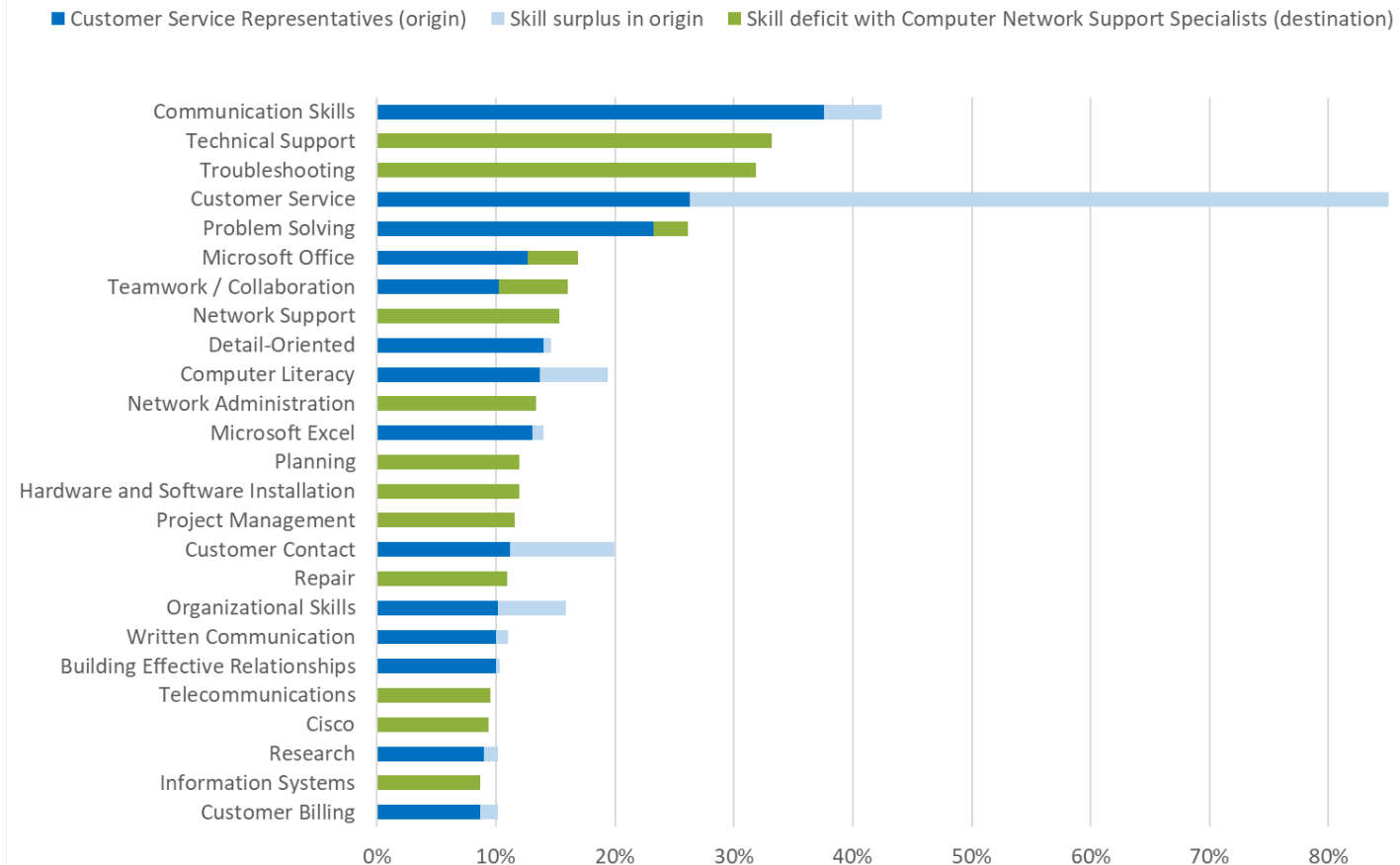
<b>Occupation</b>	<b>Similarity Score</b>
Amusement and Recreation Attendants	
Bartenders	
Bill and Account Collectors	
Computer User Support Specialists	
Customer Service Representatives	
Dispatchers, Except Police, Fire, and Ambulance	
Engineering Technicians, Except Drafters, All Other	
Fitness Trainers and Aerobics Instructors	
Food Preparation Workers	
Health Technologists and Technicians, All Other	
Insurance Claims and Policy Processing Clerks	
Interviewers, Except Eligibility and Loan	
Photographic Process Workers and Processing Machine Operators	
Security and Fire Alarm Systems Installers	
Telecommunications Line Installers and Repairers	

# Application #1: Step 2

Occupation	Similarity Score
Amusement and Recreation Attendants	0.28
Bartenders	0.15
Bill and Account Collectors	0.62
Computer User Support Specialists	0.84
Customer Service Representatives	0.61
Dispatchers, Except Police, Fire, and Ambulance	0.62
Engineering Technicians, Except Drafters, All Other	0.76
Fitness Trainers and Aerobics Instructors	0.31
Food Preparation Workers	0.25
Health Technologists and Technicians, All Other	0.57
Insurance Claims and Policy Processing Clerks	0.49
Interviewers, Except Eligibility and Loan	0.59
Photographic Process Workers and Processing Machine Operators	0.73
Security and Fire Alarm Systems Installers	0.58
Telecommunications Line Installers and Repairers	0.46

Source: Based on analysis for DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Application #1: Step 3



Source: Based on analysis for DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Application #2 in the Cincinnati, OH MSA

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## Step 1: Identify target occupation: **Waiters & Waitresses**

- Nationally employment in food services remains down almost 40% from levels in February (BLS)
- Number of Jobs: 19,810 (BLS)
- Annual wage: \$14,450 (BLS)

## Step 2: Identify higher paying occupations with high similarity scores to target.

## Step 3: Design a training curriculum to address skill deficits.

## Step 4: Repeat steps 2 & 3 to identify subsequent transition opportunities. (optional)



Source: Bureau of Labor Statistics



# Application #2: Step 2

Waiters & Waitresses  
Number of jobs: 19,810  
Annual median wage: \$14,450

Sup. of Food Prep & Servers  
*Similarity score: .66*  
Number of jobs: 8,310  
Annual median wages: \$32,000  
Projected growth rate: 10.8%

Food Prep Worker  
*Similarity score: .66*  
Number of jobs: 6,040  
Annual median wages: \$16,200  
Projected growth rate: 8.2%

Driver/Sales Worker  
*Similarity score: .66*  
Number of jobs: 4,400  
Annual median wages: \$19,550  
Projected growth rate: -3%

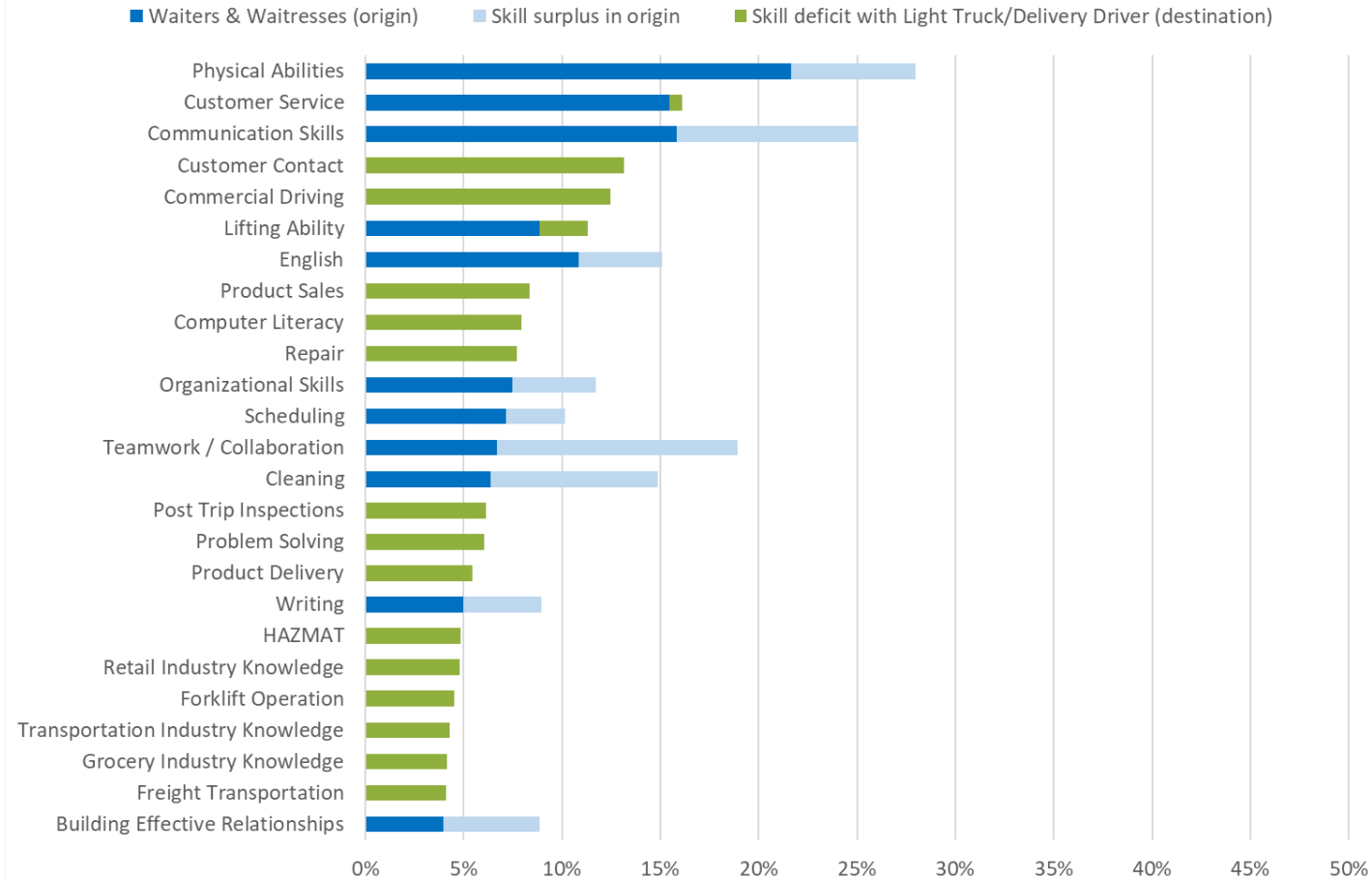
Parking Lot Attendant  
*Similarity score: .64*  
Number of jobs: 1,020  
Annual median wages: \$19,170  
Projected growth rate: 0.1%

Stock Clerks & Order Fillers  
*Similarity score: .63*  
Number of jobs: 17,950  
Annual median wages: \$25,100  
Projected growth rate: 1.7%

Light Truck/Delivery Driver  
*Similarity score: .63*  
Number of jobs: 7,690  
Annual median wages: \$32,130  
Projected growth rate: 4.4%

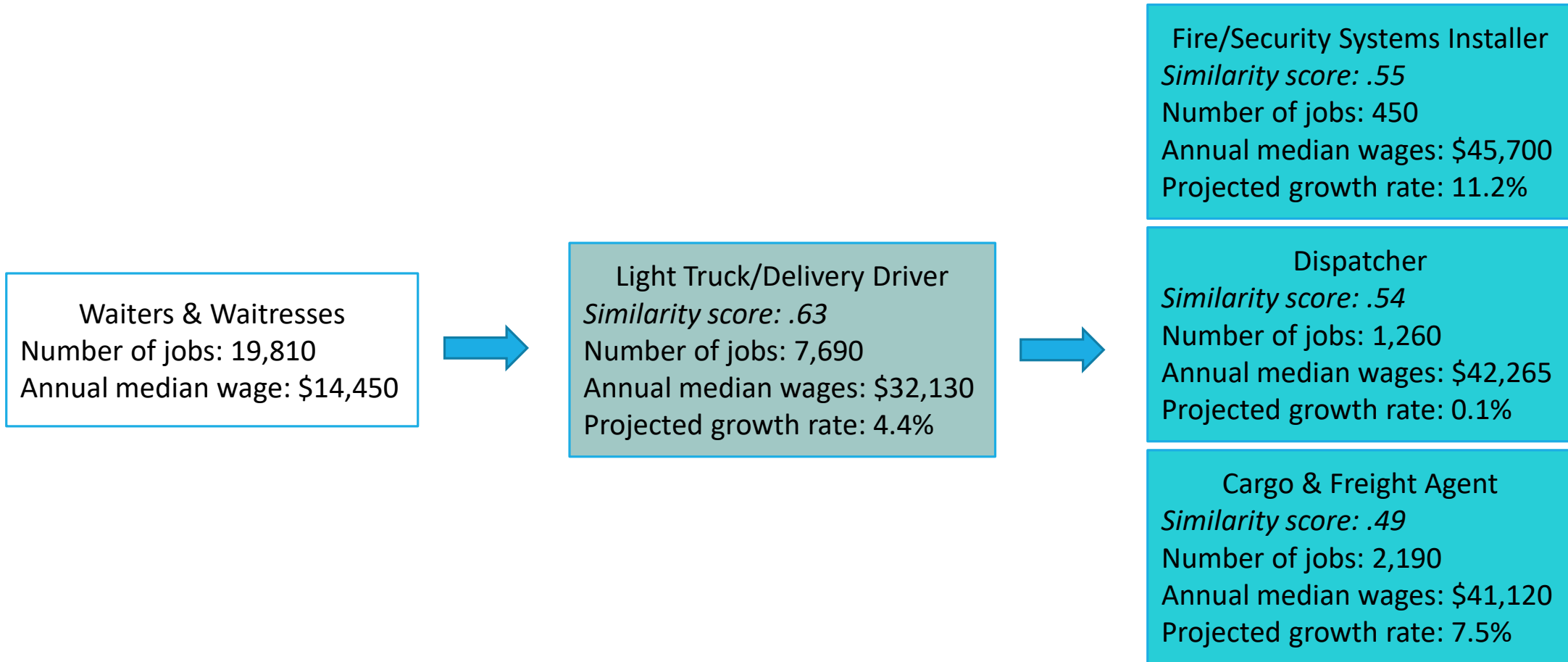
Source: Based on analysis for DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Application #2: Step 3



Source: Based on analysis for DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# Application #2: Step 4



Source: Based on analysis for DeMaria, Kyle, Kyle Fee, and Keith Wardrip. *Exploring a Skills-Based Approach to Occupational Mobility*. Federal Reserve Banks of Philadelphia and Cleveland, 2020.

# *Occupational Mobility:* Designing Micro-Pathways to Opportunity Occupations



**Marta Urquilla**

*Chief Program Officer*

Education Design Lab

Education Design Lab

# Designing Education Toward the Future of Work



We co-design, test, and build higher education models to better address **affordability, relevance, and portability.**

**Our Partners**

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**60**

**Employers**

**125**

**Universities + Colleges**

majority of them serve “new traditional” students

**5**

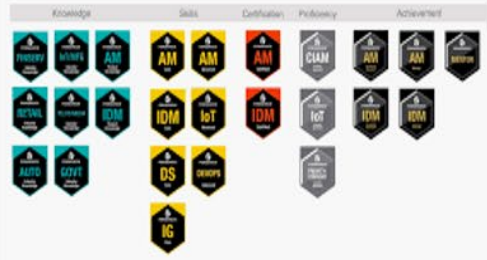
**Ecosystems**

states, systems, cities





## ForgeRock Digital Badges



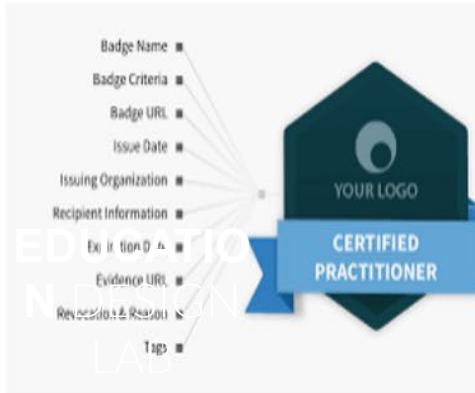
ForgeRock Digital Badges - Signposts to ...  
forgerock.com

The Weekly Buffer: The Power of Digital ...

Digital Badges for Museum Futurists ...

Digital Badges ...

Designing your digital badge - a handy ...  
rise.global



# 738,000 credentials

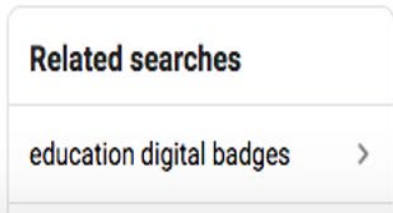


Open Badges  
accredible.com

Anything With Digital Badge  
slideshare.net

Digital Badges: What they are and how ...  
careerinstem.com

Arcitura | Digital Badges  
arcitura.com





# Learners Want Micro-Credentials

Post-COVID, learners want better, faster, cheaper options:

- **62%** prefer **non-degree + skills training** over degree programs
- **46%** prefer **online learning**
- **23%** prefer **employer-based** programs

*Strada Center for  
Consumer Insights*

- **Nearly 1 in 10** undergraduates are working solely toward a certificate.
- **More are pursuing certificates or associate's degrees** than bachelor's degrees.

*Georgetown University Center  
on Education and the Workforce*

# We're making a bet on community colleges post-COVID to organize the trend toward “just in time” learning.

Regional catalysts

Ear to ground with employers

Trust + affordability for the populations we want to serve

Micro-credentials can stack to degrees

Community College  
**Growth Engine Fund**



**Education** Design Lab

# Micro-Pathways: Quality Control

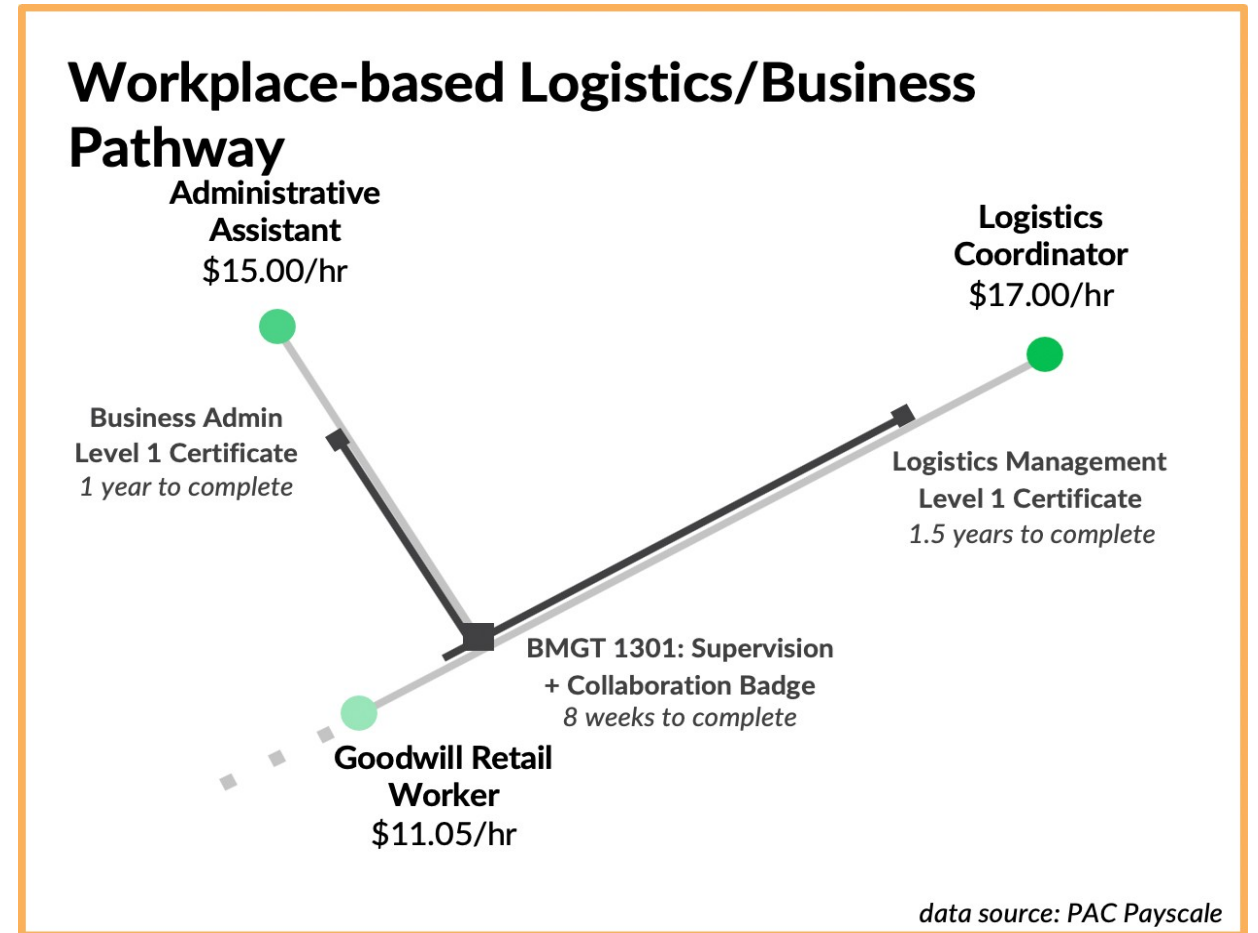
We are fighting for micro-pathways:

Median wage earnings potential

One year or less

Stackable to a degree

Include 21<sup>st</sup> century skill credentials



ALAMO COLLEGES DISTRICT  
Palo Alto College

# Why Micro-Pathways?



“ I was filled with a feeling of gratefulness. I had to keep myself from tearing up because I was so excited to be there starting the process to something that is going to change my life. ”



# The Lab's 21st Century Skills



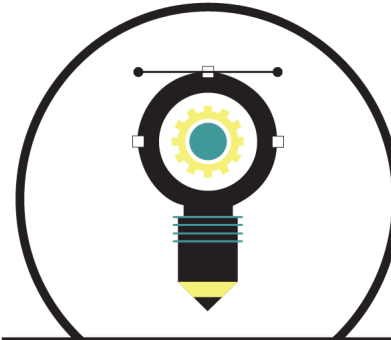
**INITIATIVE**

Education Design Lab



**COLLABORATION**

Education Design Lab



**CREATIVE PROBLEM SOLVING**

Education Design Lab



**INTERCULTURAL FLUENCY**

Education Design Lab



**RESILIENCE**

Education Design Lab



**CRITICAL THINKING**

Education Design Lab



**EMPATHY**

Education Design Lab



**ORAL COMMUNICATION**

Education Design Lab

Education Design Lab

# UpSkill SA! San Antonio, TX

How might we **upskill incumbent retail workers** to prepare them for careers in advanced manufacturing and other growth sectors that can **enable their social mobility**?

Place-based partnership to co-design, build, and test two scalable career pathways for middle-skilled jobs



# UpSkill SA! San Antonio, TX

## SkillsBooster

**Productivity doubled:**

11% to 28% (post-badge)

**Leadership nearly doubled:**

47% to 84% (post-badge)

## Certificate Plus

**Collaboration nearly doubled:**

29% to 57% (post-Certificate Plus)

**Productivity increased by nearly 40 percentage points:**

25% to 64% (pre-Certificate Plus)

## Two Upskilling Pathways

### SkillsBooster

a bundle comprised of three employer-identified in-demand 21st Century Skills Micro-credentials

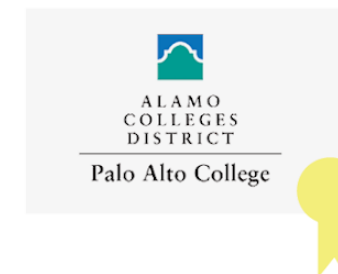
piloted November 2019



### Certificate Plus

a pathway that integrates a 21st Century Skills Micro-credential into a technical skill building course within a logistics management certificate program

piloted October 2019

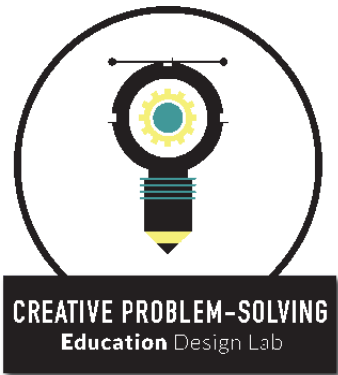




# Creativity for COVID-19

Collaboration between Washington DC's K-12 system, employers, and nonprofits to help save summer jobs for DC public high school students.

- Paid, virtual “design challenge” for students
- Minimal time commitment
- No cost to employers



## Preparing Future-Ready Students

Upon successful program completion, students will be eligible to earn an industry-designed 21st century skill micro-credential for **Creative Problem Solving**.



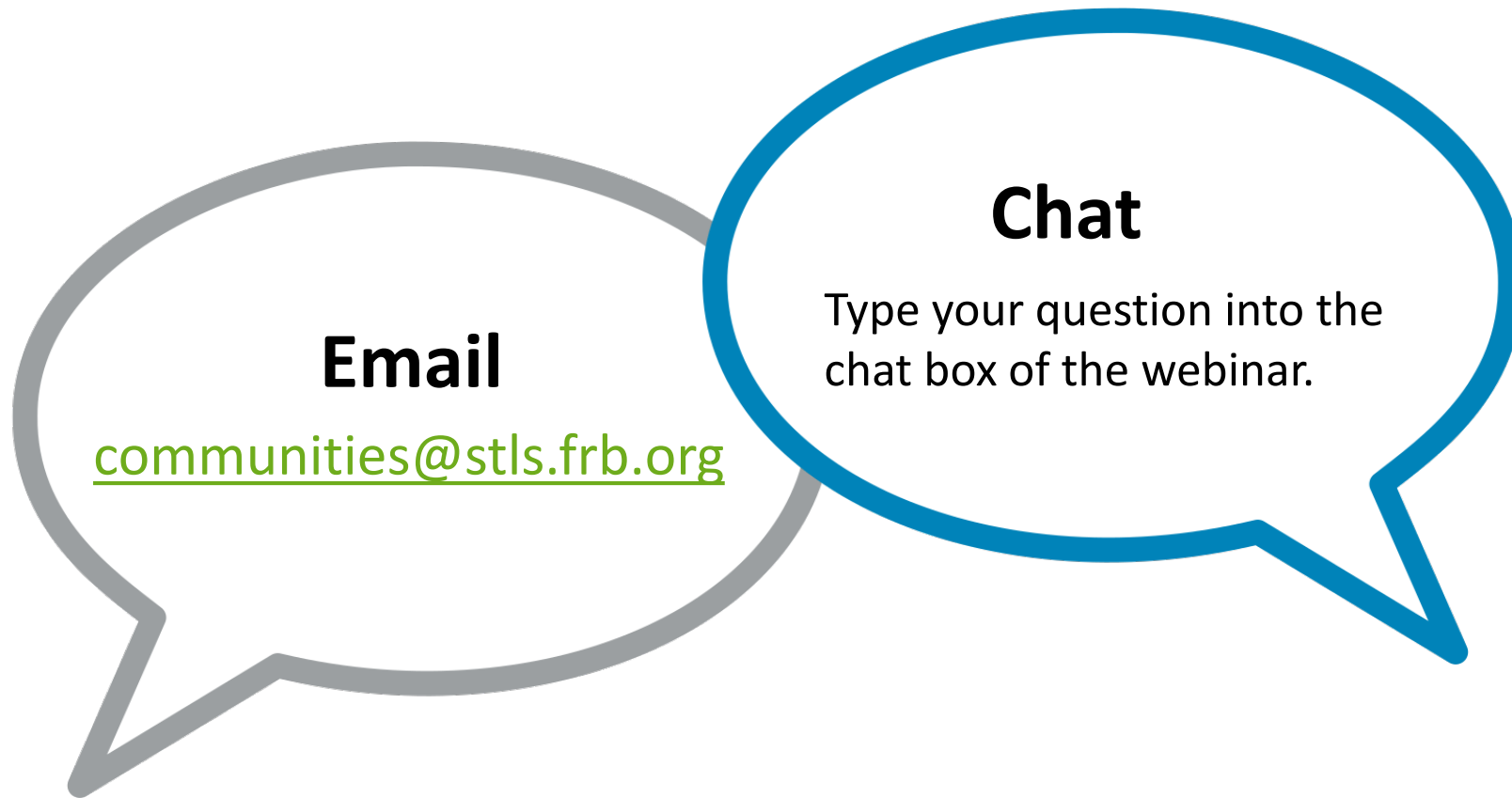
# Equitable Futures

“ I can see my future now as I couldn't see it before. ”



# Questions

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# Next Steps

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- All session materials are available on our website, and in the next few days, we will post an audio file of today's session.
- If you have topical suggestions for future sessions, or any questions about this program, please feel free to contact us at [communities@stls.frb.org](mailto:communities@stls.frb.org).
- Information about future sessions will be posted on our website along with archived materials from past sessions: <https://bsr.stlouisfed.org/connectingcommunities>.