



# **Lower-Wage Work and Occupational Mobility**

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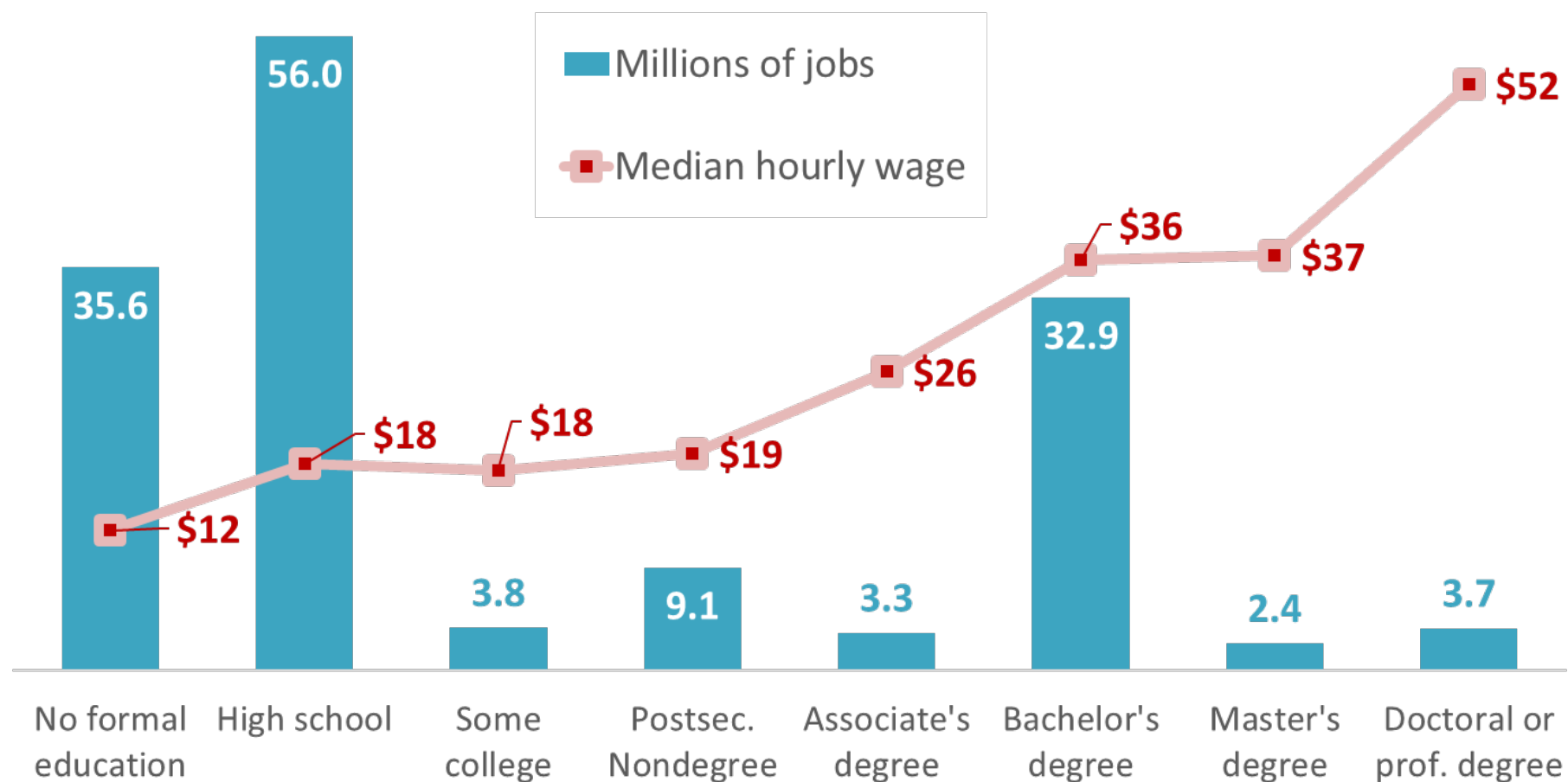


# Disclaimer

The views expressed here are those of the presenter and do not necessarily represent the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.



# Most jobs require very little formal education







# The three largest occupations in the U.S. pay very low wages

Totaling 11.9 million jobs, these three occupations account for **more than three times** the number of jobs requiring a doctoral degree.

Fast food workers (\$10.93/hour)



Retail salespersons (\$12.14/hour)



Cashiers (\$11.37/hour)

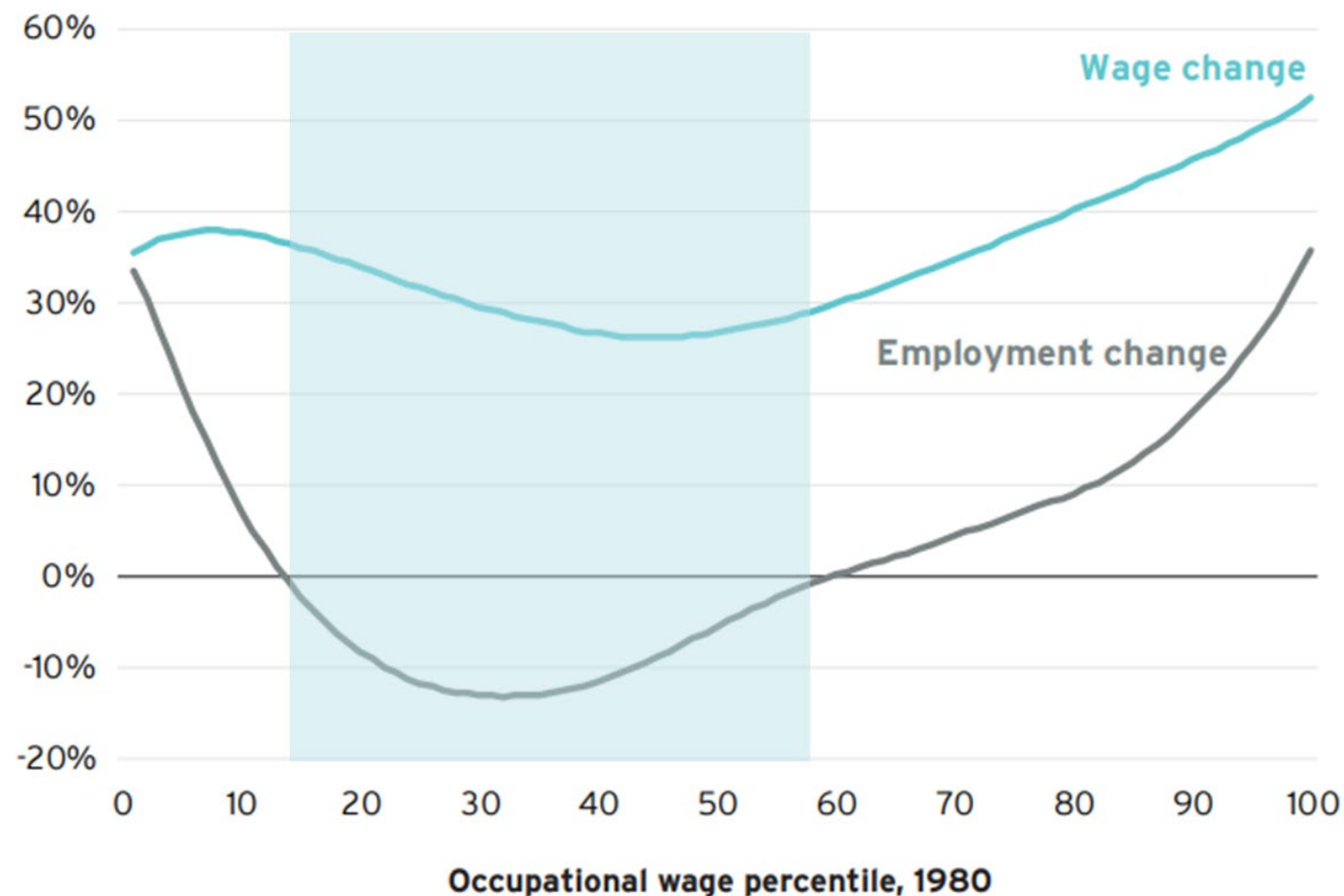






# Middle-wage jobs have declined since 1980...

Percent change, United States, 1980-2016

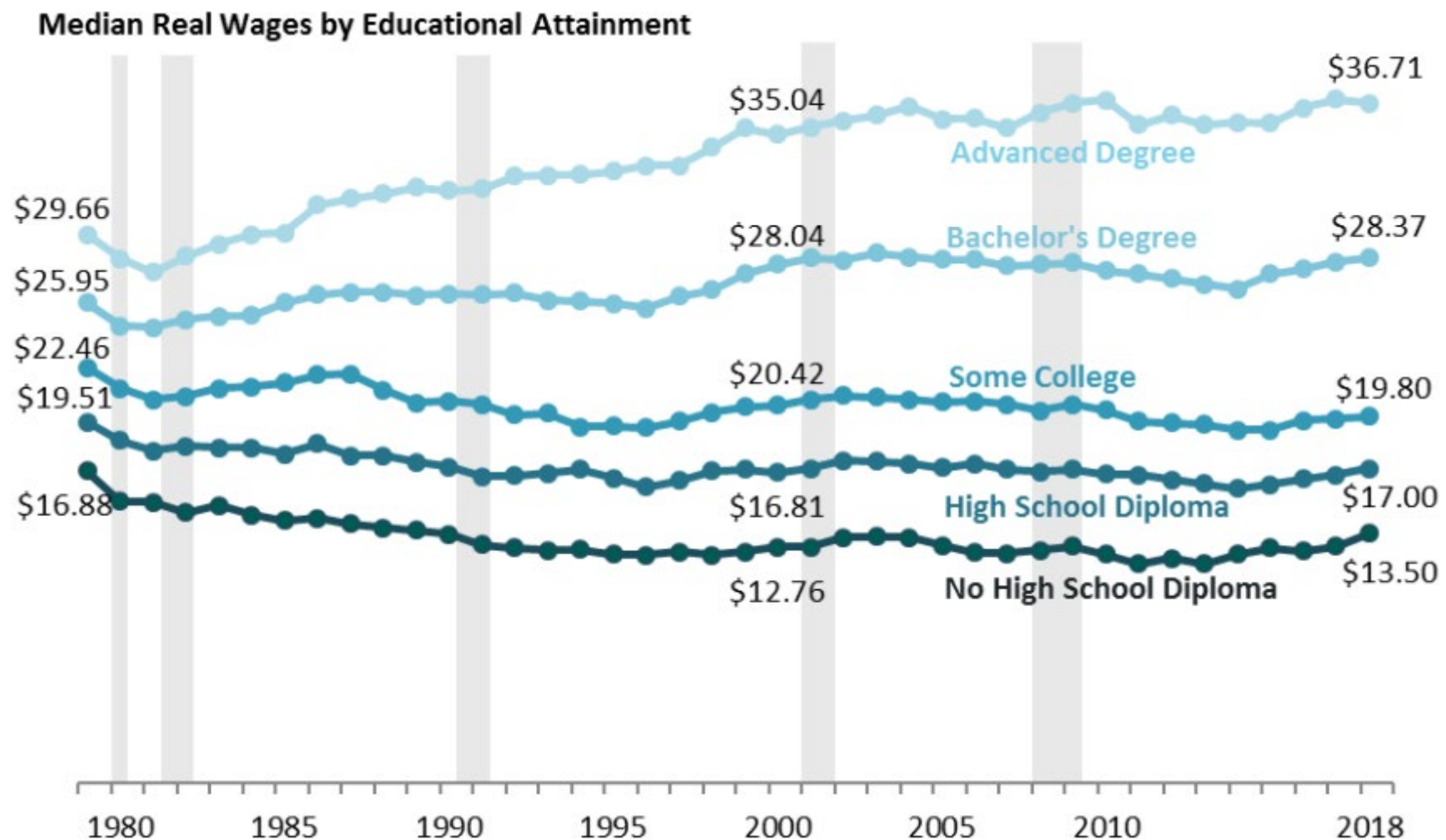


Source: Chart from Mark Muro, Robert Maxim, and Jacob Whiton, *Automation and Artificial Intelligence: How Machines Are Affecting People and Places*, Washington, DC: Metropolitan Policy Program at Brookings, 2019.

ROC Local



# ...and real wages have fallen for noncollege workers

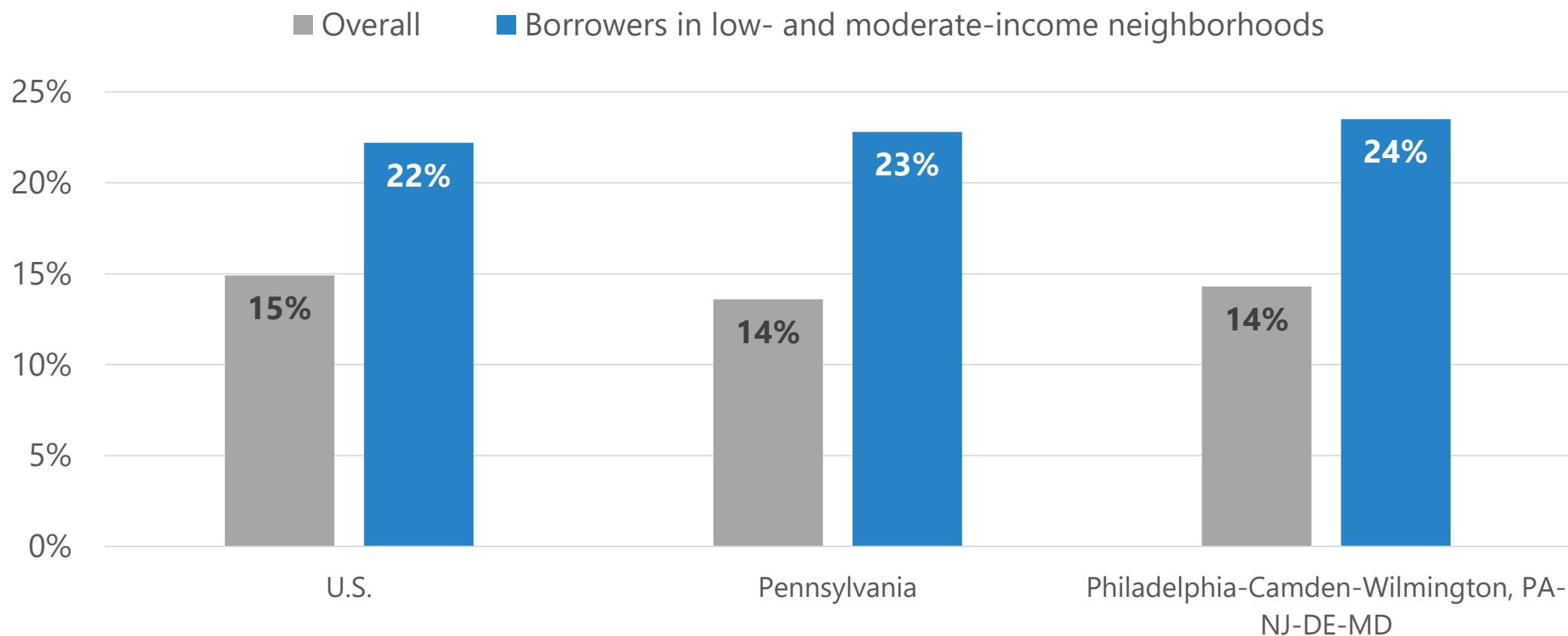


Sources: Chart from Congressional Research Service, "Real Wage Trends, 1979 to 2018," CRS Report R45090-Version 12-Updated, 2019; created using Current Population Survey Outgoing Rotation Group data (1979–2018).



# Student loan delinquency rates are high, particularly for borrowers in low- and moderate-income neighborhoods

Share of Student Loan Borrowers with Severely Delinquent Debt



Source: Federal Reserve Bank of New York/Equifax Consumer Credit Panel (December 1, 2019), tabulated by the Federal Reserve Banks of Philadelphia and Minneapolis and accessed via the Consumer Credit Explorer (accessed June 30, 2020).





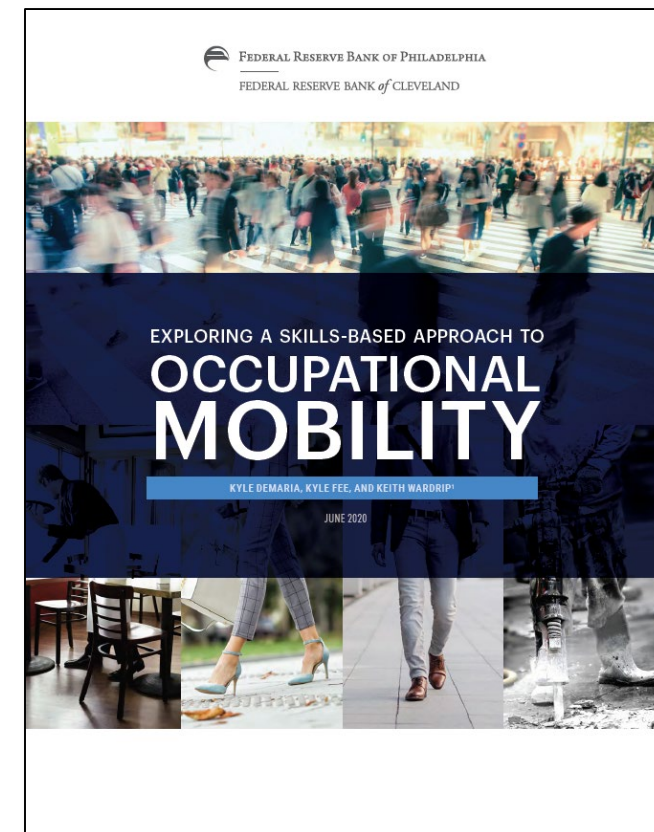
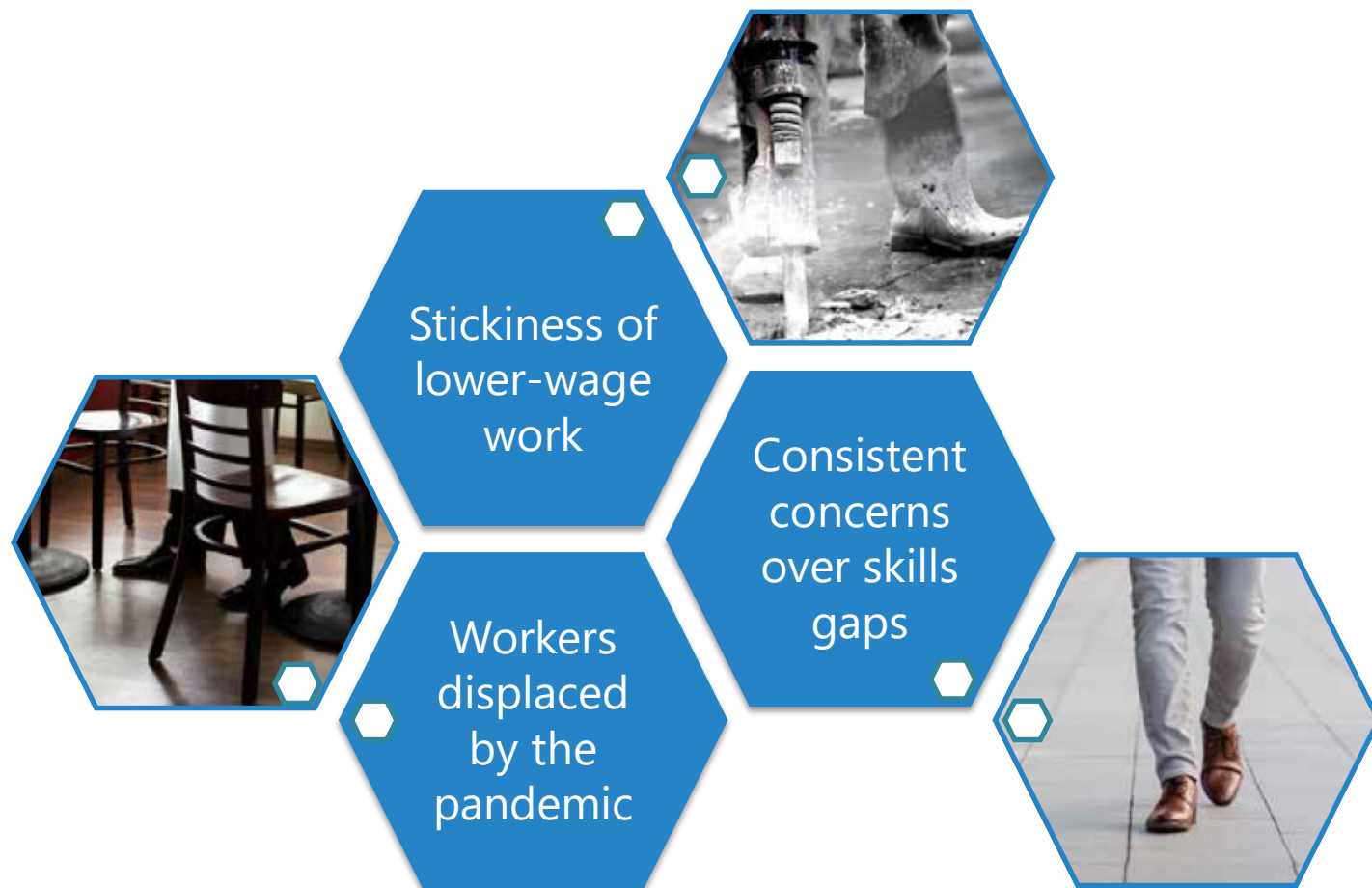
# The labor market offers *some* economic opportunity for noncollege workers



- 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.



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





# Our guiding principles, data, and methods

## Occupations Defined by Tasks and Skills

- An occupation can be thought of as a bundle of tasks, for which a worker needs a certain set of skills.
- Occupations differ in the types of skills they require and the frequency with which those skills are required.

## Skills Described in Online Job Ads

- We analyzed nearly 60 million online job advertisements posted between 2014 and 2018.
- Our analysis covers the 33 metro areas with at least 1 million jobs.

## Potential Transitions...

- Occur within and between lower-wage and opportunity occupations.
- Require at least a 10 percent pay increase but not a bachelor's degree.
- Involve destinations projected to remain stable or grow nationally between 2018 and 2028.

## Top Transitions...

- Represent potential transitions with a similarity score greater than 0.75.



# 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.

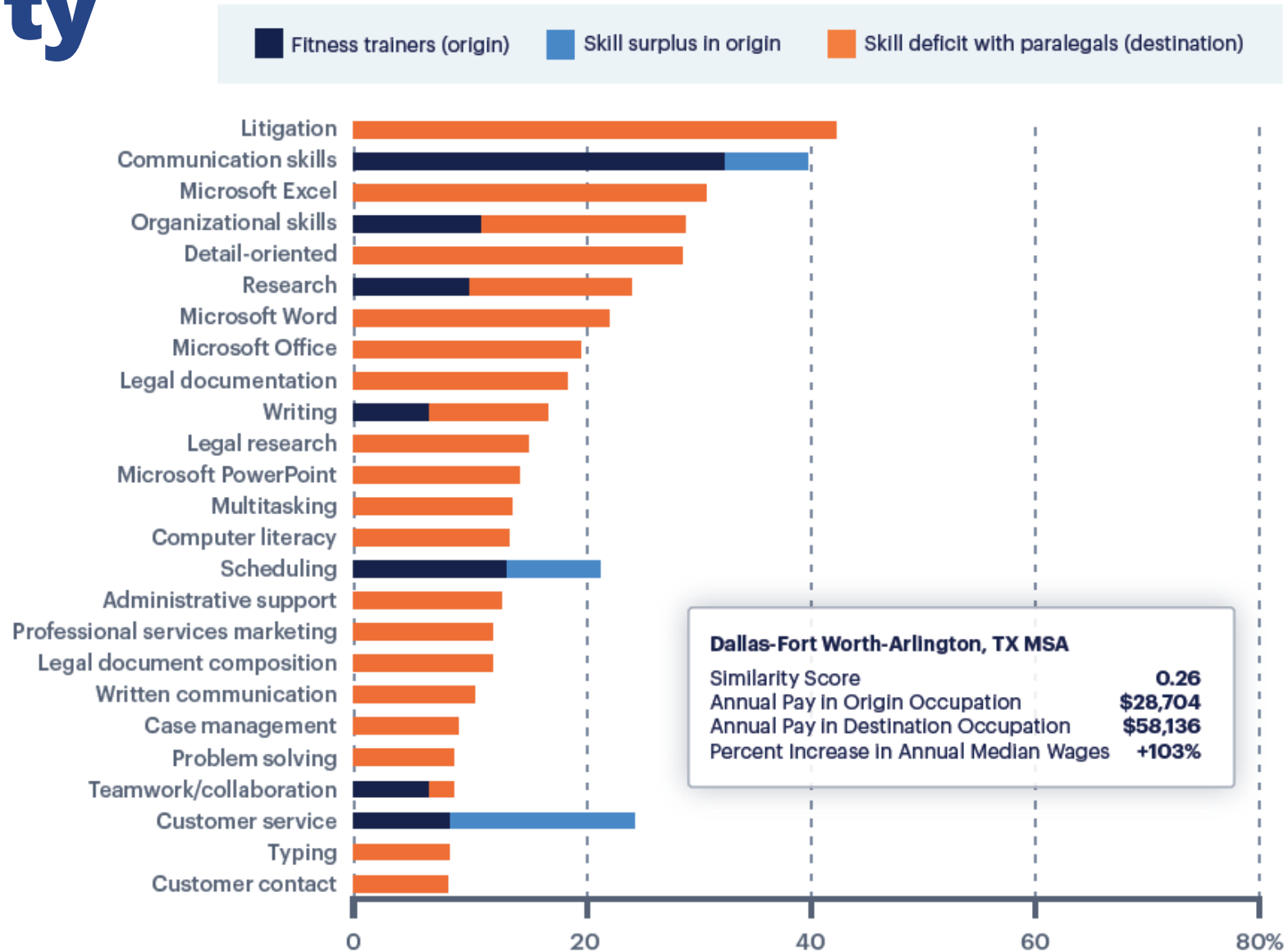
Skill	Overall intensity	Overall	Rank	
			Lower-wage occupations	Opportunity occupations
Communication skills	26.9%	1	1	1
Customer service	17.7%	2	2	3
Physical abilities	14.3%	3	3	8
Organizational skills	13.1%	4	4	4
Teamwork/collaboration	11.8%	5	9	10
Scheduling	10.9%	6	7	6
Detail-oriented	10.2%	7	8	13
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  $\leq 10$  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.

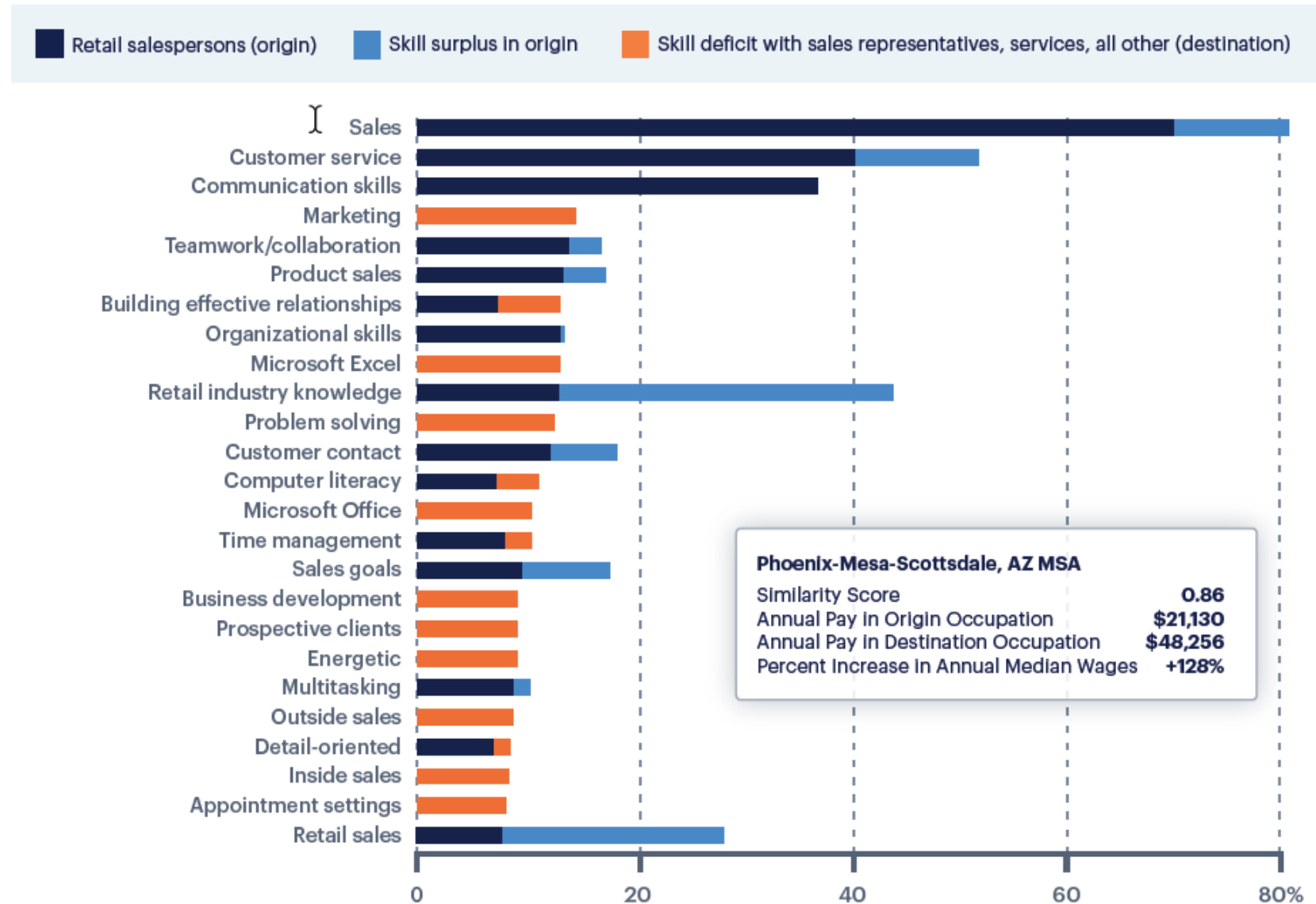
# The vast majority of potential transitions involve very different skill sets...

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



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

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

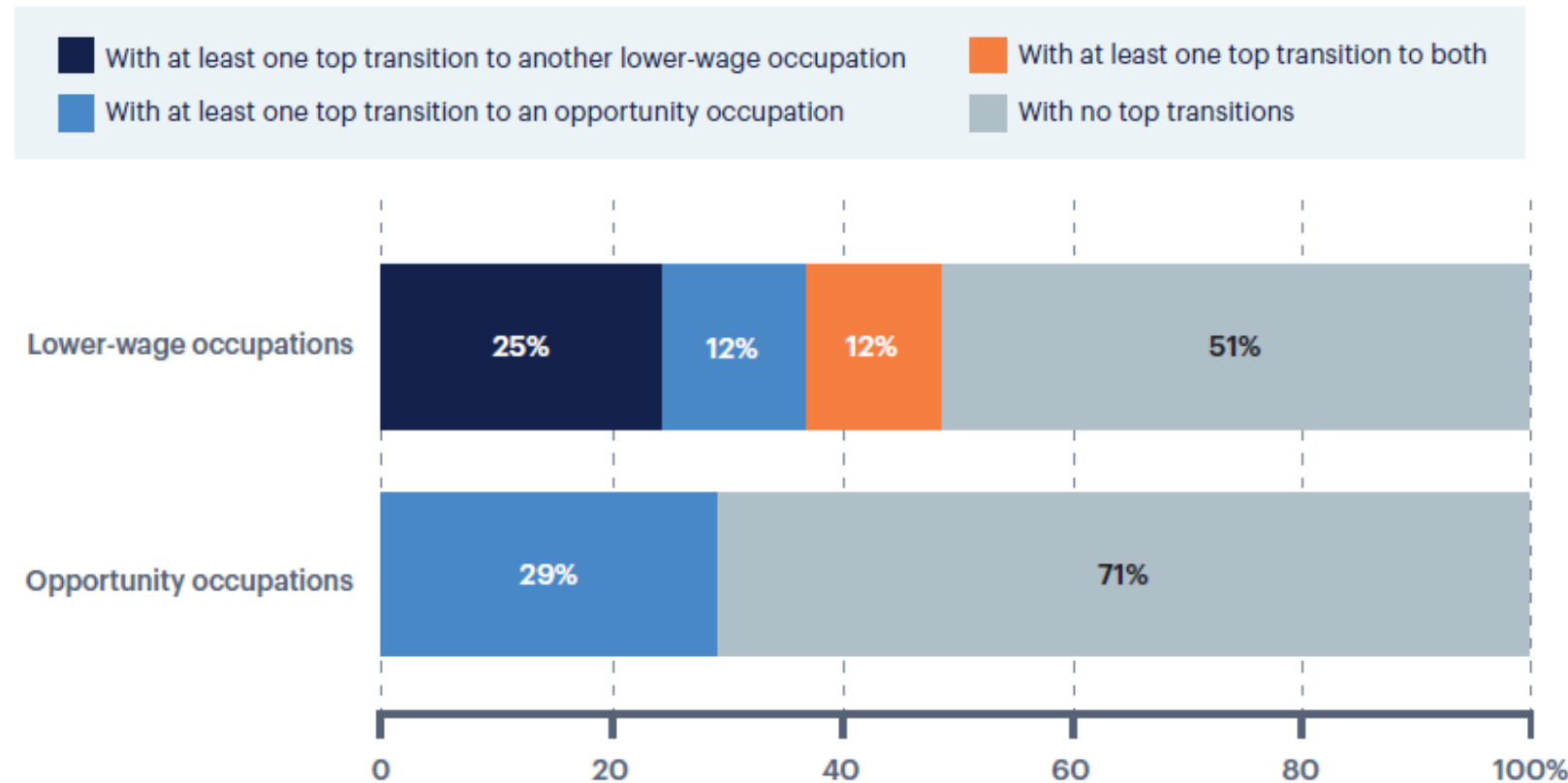




# Nearly half of lower-wage employment can be paired with a top transition

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

Share of Employment by Type of Top Transition



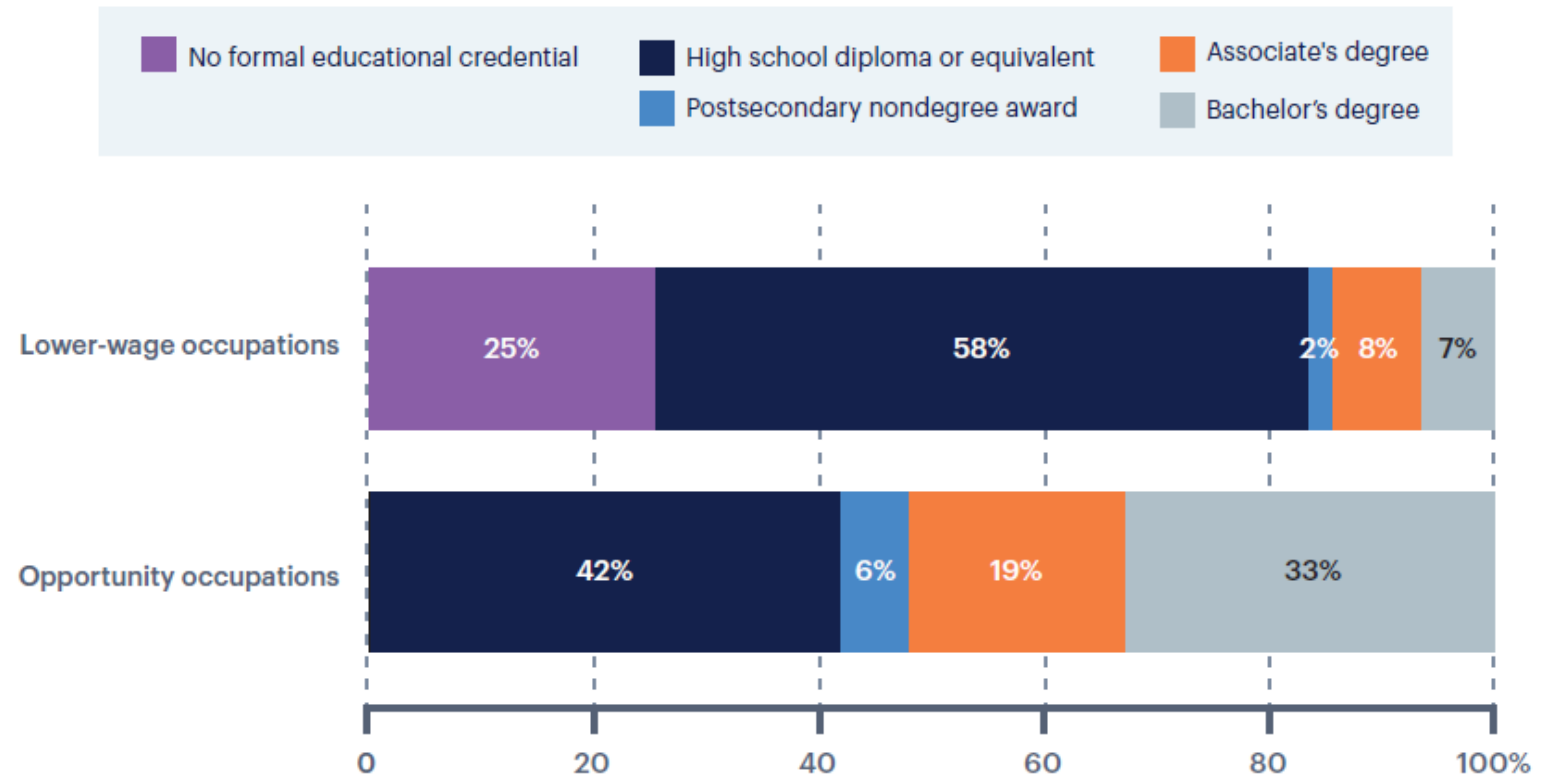
# Top transitions can represent substantial wage gains

- Overall, top transitions would represent an increase in average annual median wages of 49%, from around \$30,000 to just under \$45,000.

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>

**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**







# Philadelphia's ten highest-scoring top transitions span the occupational landscape

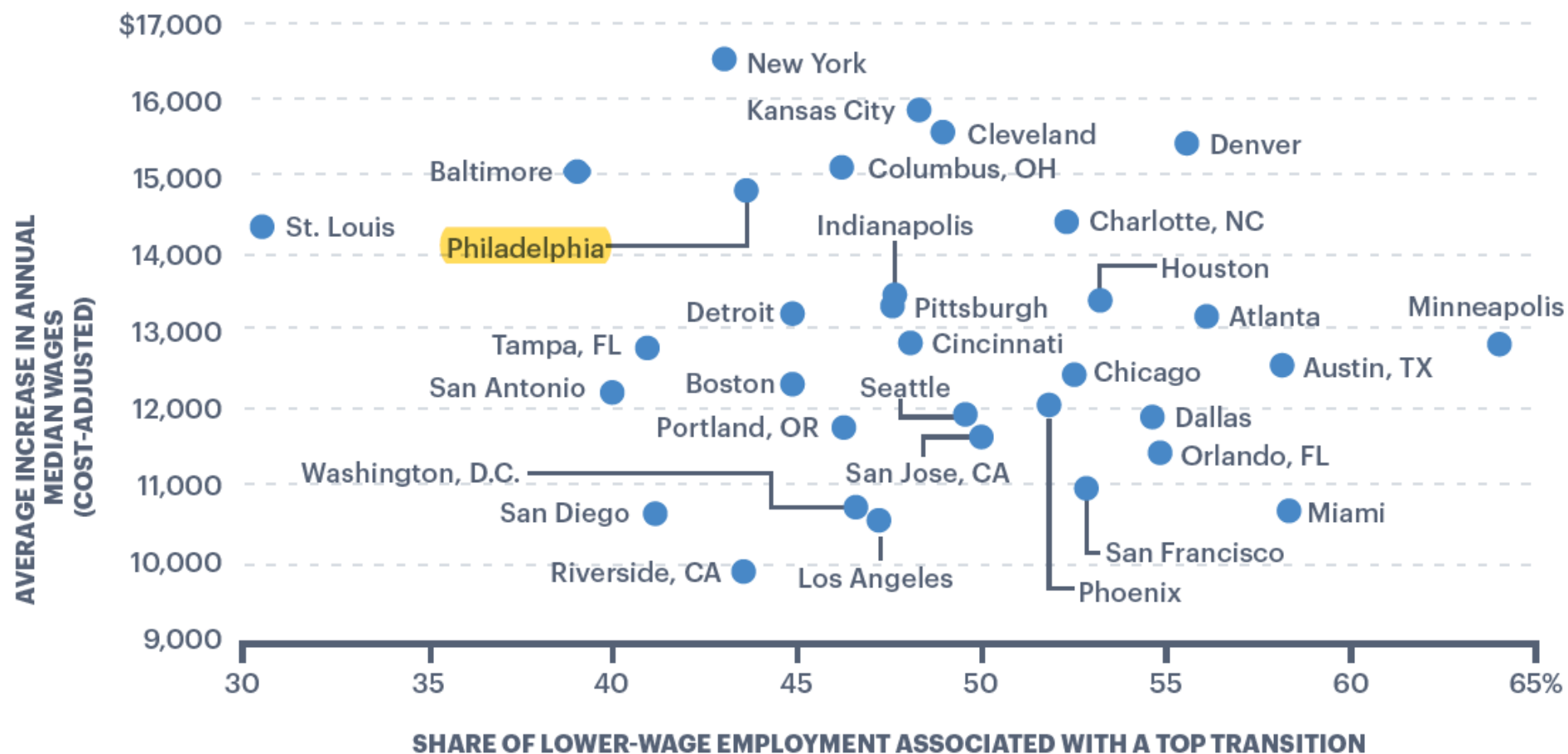
Origin occupation	Origin annual median wages	Destination occupation	Destination annual median wages	Percent wage increase	Similarity score
Teacher Assistants	\$25,410	Preschool Teachers, Except Special Education	\$28,101	11%	0.93
Installation, Maintenance, and Repair Workers, All Other	\$41,683	Industrial Machinery Mechanics	\$57,408	38%	0.92
Mental Health and Substance Abuse Social Workers	\$40,248	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	\$44,824	11%	0.92
Installation, Maintenance, and Repair Workers, All Other	\$41,683	Industrial Engineering Technicians	\$58,240	40%	0.91
Bill and Account Collectors	\$37,939	Credit Counselors	\$54,933	45%	0.90
Receptionists and Information Clerks	\$30,202	Medical Secretaries	\$38,210	27%	0.90
Inspectors, Testers, Sorters, Samplers, and Weighers	\$43,493	Life, Physical, and Social Science Technicians, All Other	\$53,976	24%	0.89
Insurance Claims and Policy Processing Clerks	\$43,347	Claims Adjusters, Examiners, and Investigators	\$70,533	63%	0.89
Office Clerks, General	\$35,859	Human Resources Assistants, Except Payroll and Timekeeping	\$41,850	17%	0.88
Computer-Controlled Machine Tool Operators, Metal and Plastic	\$44,221	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	\$55,640	26%	0.87

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

**ROC Local**



# A below-average share of Philadelphia's lower-wage employment can be paired with a top transition, but potential wage gains are substantial





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

- Skills-based hiring practices could expand applicant 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.



# Thank you

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**EQUITY INSIGHT**

# THE FUTURE OF WORK IS HERE, AND IT'S HUMAN



FEDERAL RESERVE BANK  
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 **HUMANATURE**



# The Future of Jobs and Job Training

## PEW RESEARCH

A focus on nurturing unique human skills that artificial intelligence (AI) and machines seem unable to replicate: creativity, collaborative activity, abstract and systems thinking, complex communication, and the ability to thrive in diverse environments.







# WHAT MAKES US HUMAN?



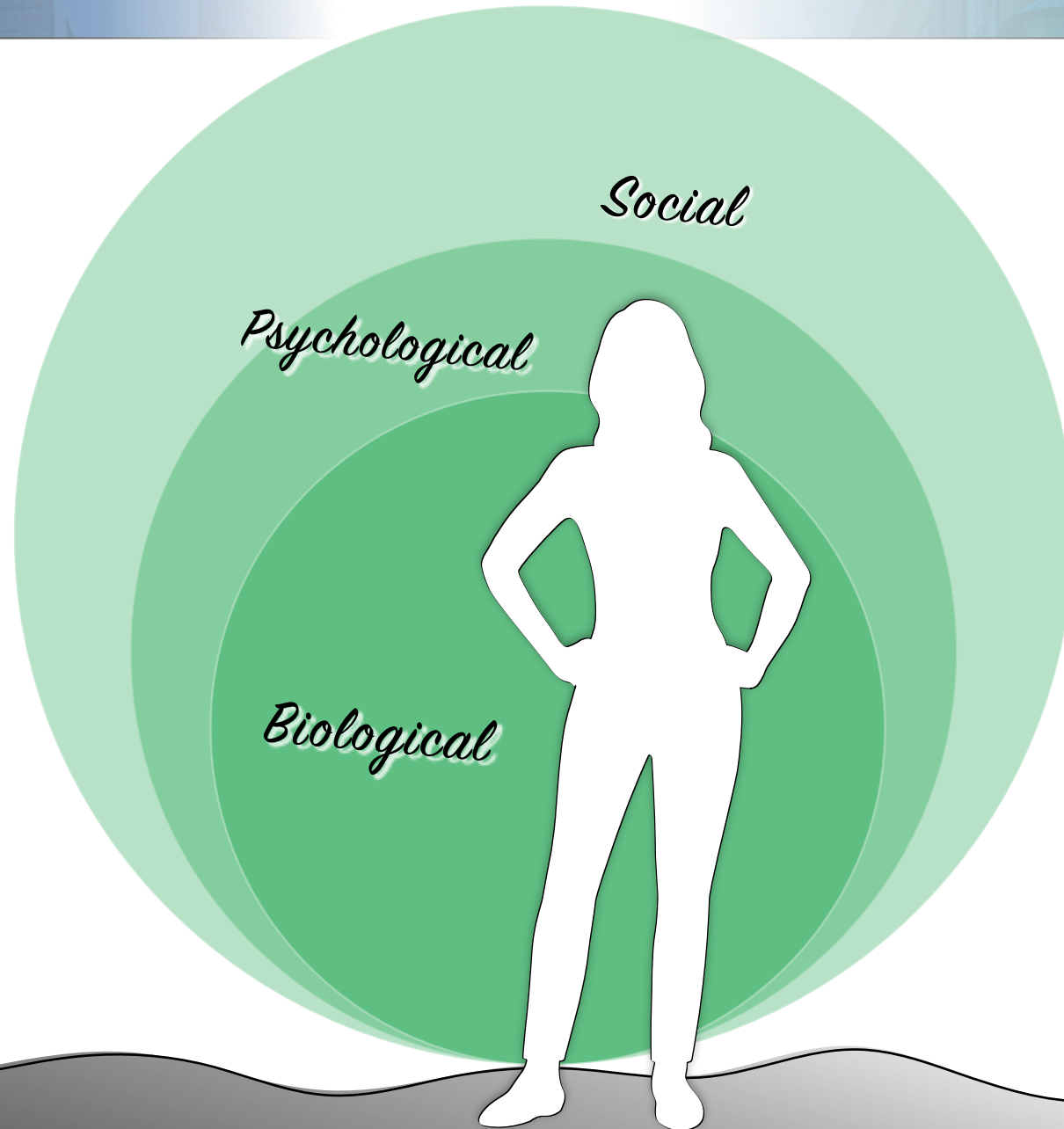
# Environments

## The Human Dimension





**BIO-  
PSYCHO-  
SOCIAL-  
SPIRITUAL  
DEVELOPMENT**







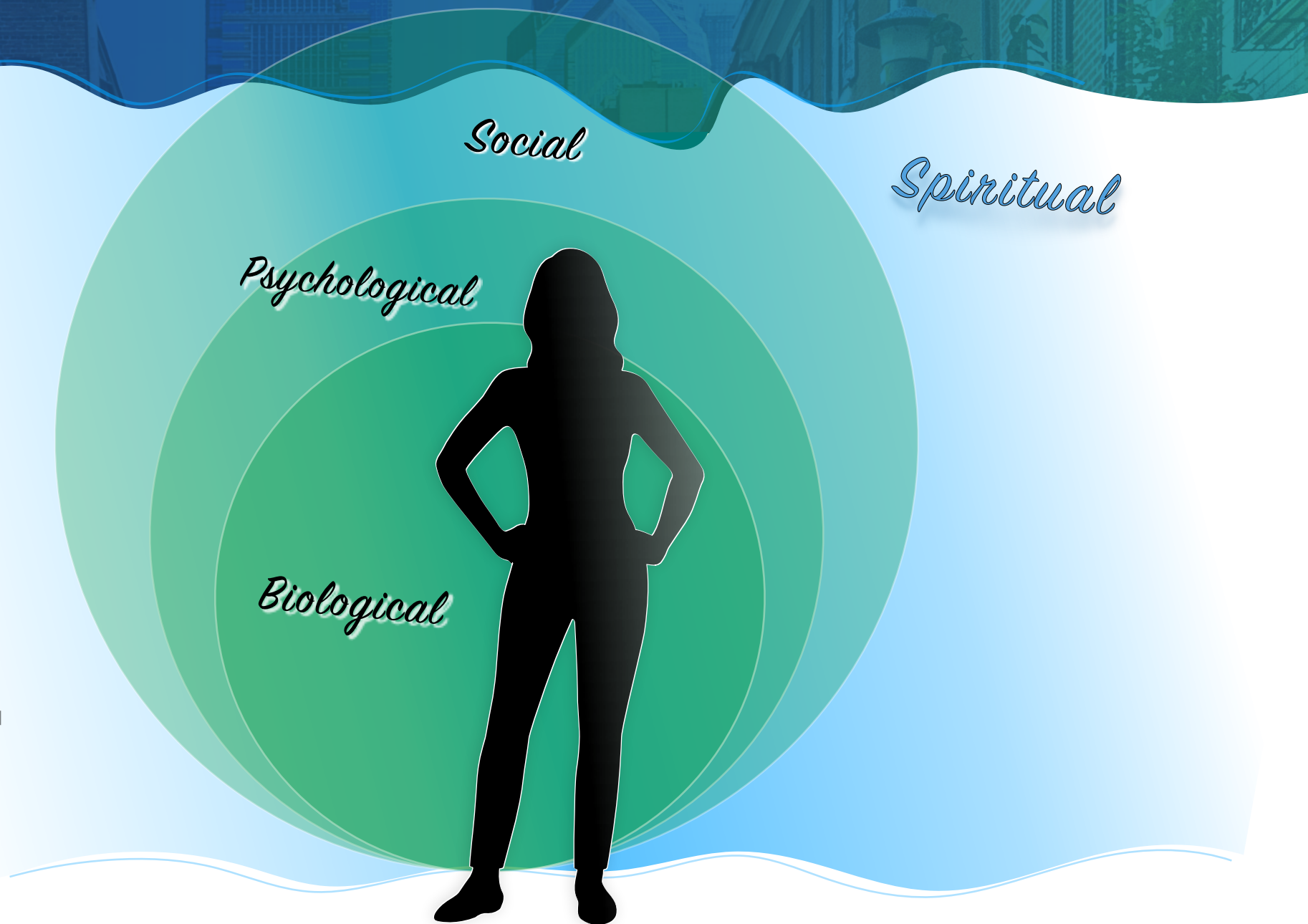
# COMPLEX EMOTIONAL LANDSCAPE







**BIO-  
PSYCHO-  
SOCIAL-  
SPIRITUAL  
DEVELOPMENT**





# **EXAMPLES OF CHRONIC STRESSORS**

- 1. Intergenerational caregiving**
- 2. Living with a chronic illness**
- 3. Caregiving for someone with a chronic illness**
- 4. Parenting alone**
- 5. Caring for a loved one with any form of a disAbility**





# UNDERSTANDING TRAUMA

**TRAUMA INVOLVES A [PERCEIVED OR LITERAL] THREAT TO ONE'S PHYSICAL OR EMOTIONAL WELL BEING, AND ELICITS INTENSE FEELINGS OF HELPLESSNESS, TERROR, AND LACK OF CONTROL."**

**(APA, 2000)**



# THE NOT-SO-SWEET SPOT

**CHRONIC STRESSORS**

**EXPONENTIAL  
TOXICITY**

**TRAUMATIC EXPERIENCES**



# WORKFORCE DEVELOPMENT

Prioritizing the growth of Soft Skills

ENTREPRENEUR

WELL-BEING







# The Future of Jobs and Job Training

## PEW RESEARCH

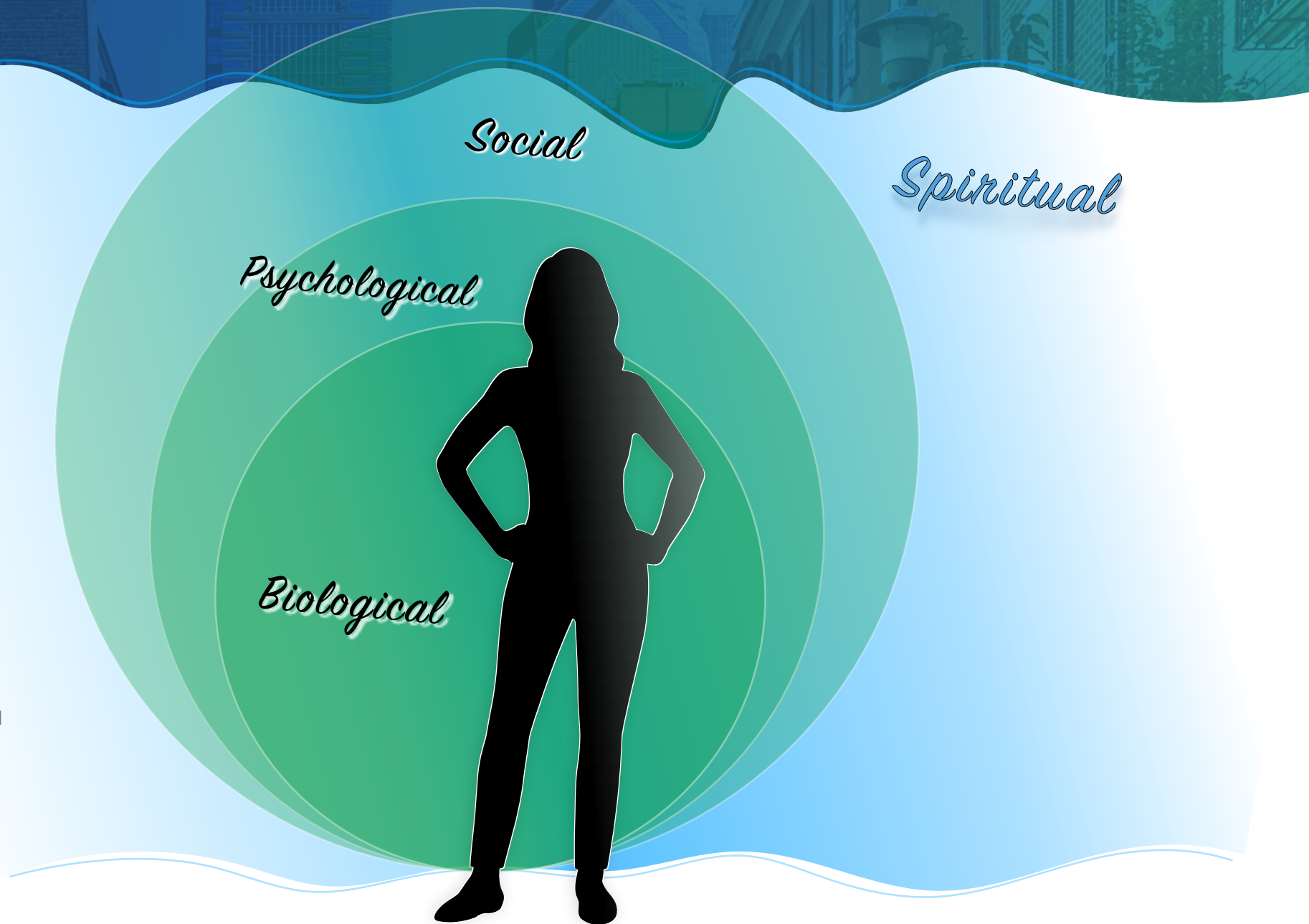
A focus on nurturing unique human skills that artificial intelligence (AI) and machines seem unable to replicate: creativity, collaborative activity, abstract and systems thinking, complex communication, and the ability to thrive in diverse environments.





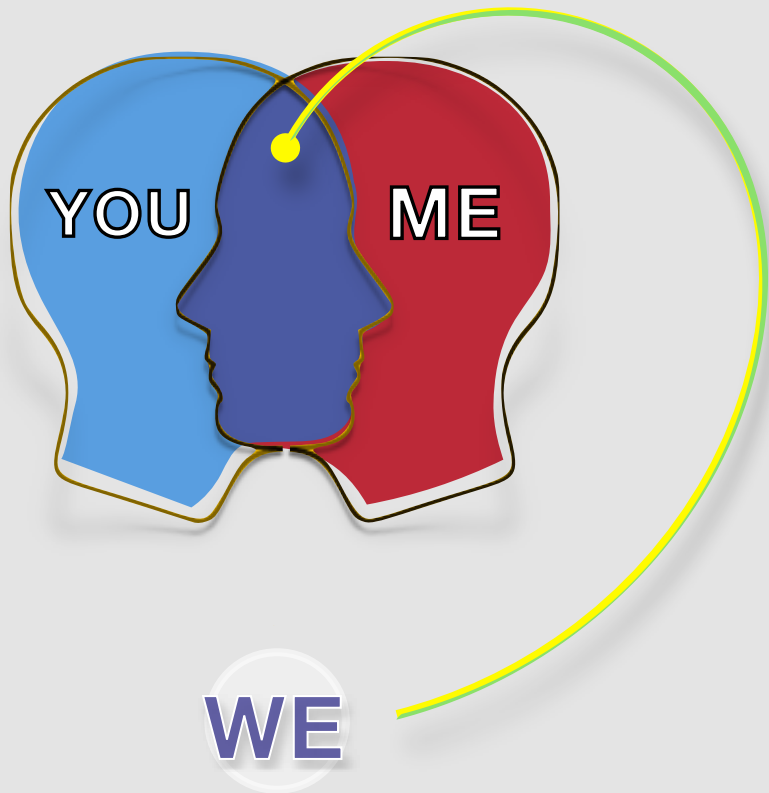


**BIO-  
PSYCHO-  
SOCIAL-  
SPIRITUAL  
DEVELOPMENT**





# EMOTIONAL EXPERIENCES



## BRIDGES TO EMPATHY

Lack of Control or Powerlessness

Disoriented or Confused

Minimized or Diminished

Fear of Failing or Hopelessness

Embarrassment or Shame



# TWO CORE PROBLEMS

## THE FUTURE OF WORK

- Automation
- the Gig Economy

Increasing need for

*"Soft Skills"*  
*Behavioral Skills*

**HUMAN SKILLS**

## THE REALITY OF TRAUMA AND CHRONIC STRESS

Contributing factors: Generated within and outside of the workplace

- *Historical and Modern-Day Trauma*
- *Disparities in Wealth*
- *Climate Disasters*
- *Displacement*





# MARKET DEMAND

*Customers are requesting consulting support for:*

**JOBS AND JOB-READINESS**

*for*

**MARGINALIZED POPULATIONS**

*such as:*

- Opportunity Youth
- Veterans
- People in recovery
- People experiencing homelessness

- "Soft Skill" Development
- Code-Switching
- Addressing trauma  
w/o clinical expertise

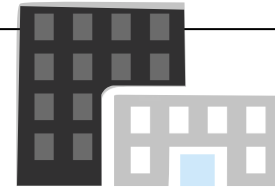
## ORGANIZATIONAL CULTURE CHANGE

- Conflict Management
- Inclusiveness and Belonging





# REFRAMING



MARGINALIZED  
INDIVIDUALS &  
COMMUNITIES

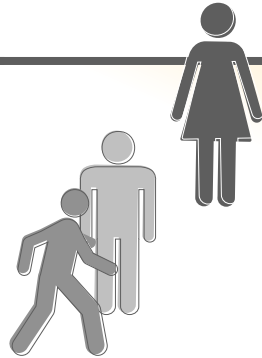


INCLUSIVE ECONOMY  
INCLUSIVE GROWTH  
EQUITABLE DEVELOPMENT

\$ Access

Bias

*Jobs, Entrepreneurship, Upward Trajectories*



*This means that, whether we like it or not:*



Work is a place where we practice and learn **human skills**



We must define, design, and iterate what **inclusivity**, **belongingness**, **equity**, and **justice** looks like on a systems level



**We are all learners**



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**EQUITY INSIGHT**

# THE FUTURE OF WORK IS HERE, AND IT'S HUMAN



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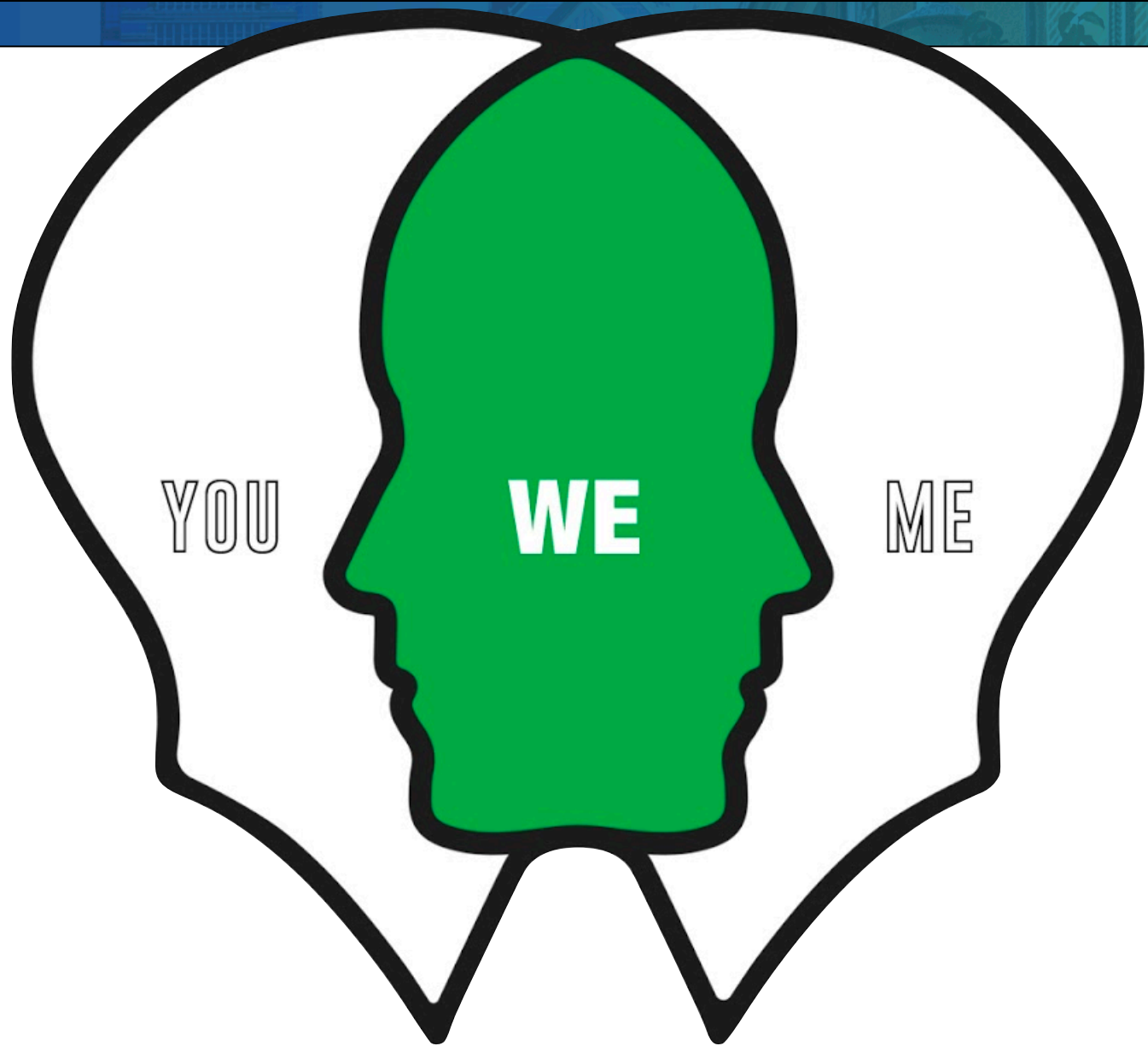




**Alternative Slides Follow**



# EMPATHY





# EMOTIONAL EXPERIENCES

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