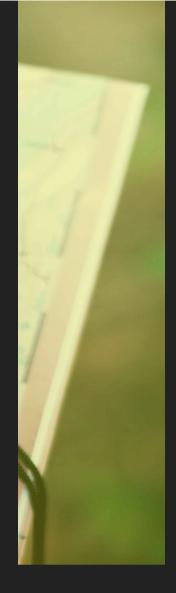
THE FUTURE WON'T
WAIT: THE NEED TO
CREATE INTEGRATED
EDUCATION AND
WORKFORCE
PATHWAYS - NOW.





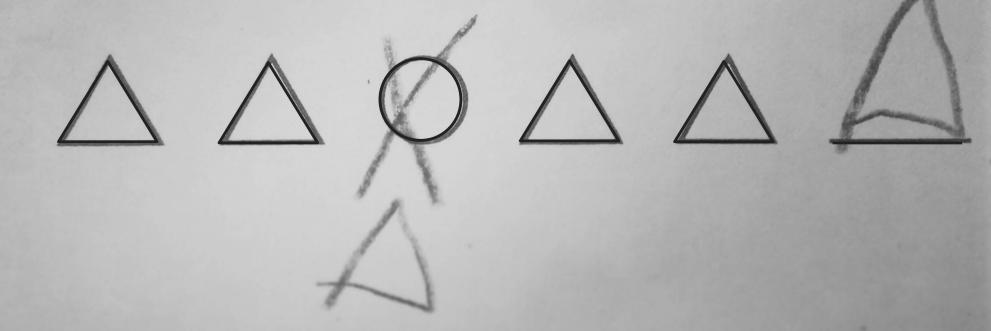


**Kyle Hartung | JFF** 

AEW NETWORK CONFERENCE | MAY 16, 2019

# ~90,000 HOURS

# 5. What comes next?



# **Building a Future That Works**

### **Vision**

A society in which economic advancement is attainable for all.

# **Mission**

JFF is building a society in which everyone has access to the skills, resources, and credentials needed to achieve economic advancement.

To reach that goal, we accelerate the alignment, transformation, and reimagination of the American workforce and education systems.









# Preparing People for the Future of Work

Automation, outsourcing, and new contract arrangements require everyone to begin thinking and acting differently.



# Ensuring Equity in Economic Advancement

Despite overall growth, economic opportunity through education and dignified work is limited for millions of Americans.

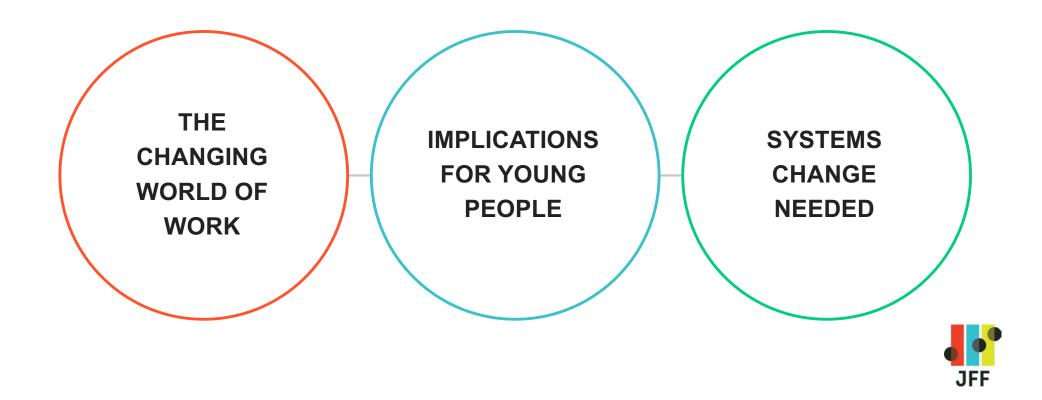


### **Meeting Employer Needs**

Employers continue to struggle to find employees with the right skills. For America to thrive in the global economy, businesses need a steady supply of highly qualified workers.

### A ROADMAP FOR TODAY'S CHIT-CHAT

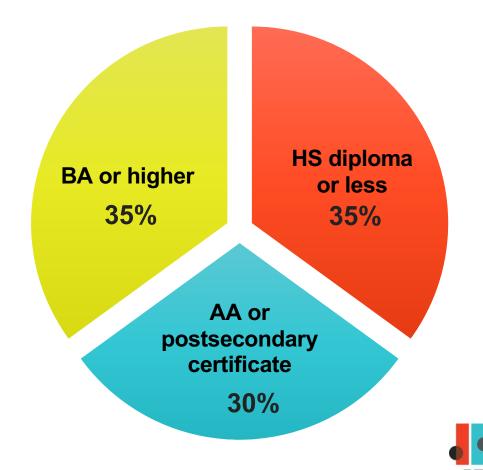
# **THREE CONSIDERATIONS**





# 2020 EMPLOYMENT PROJECTIONS

BY EDUCATION LEVEL

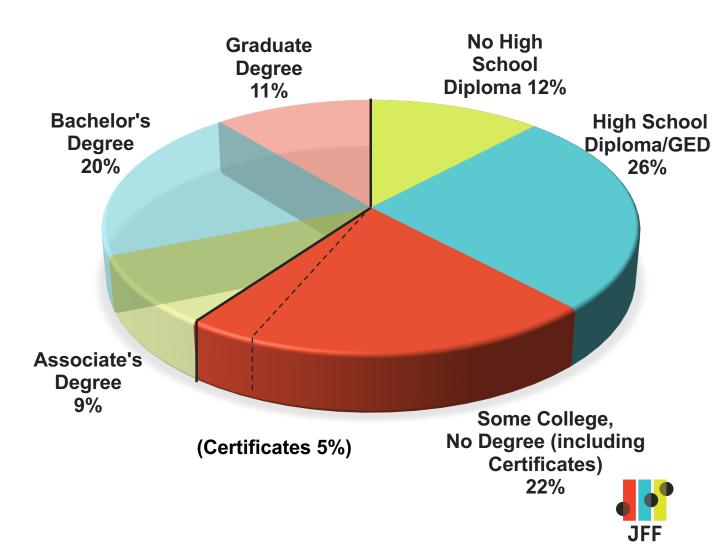


# EDUCATION LEVEL

U.S. LABOR FORCE, AGES 25-64

# 25% Gap:

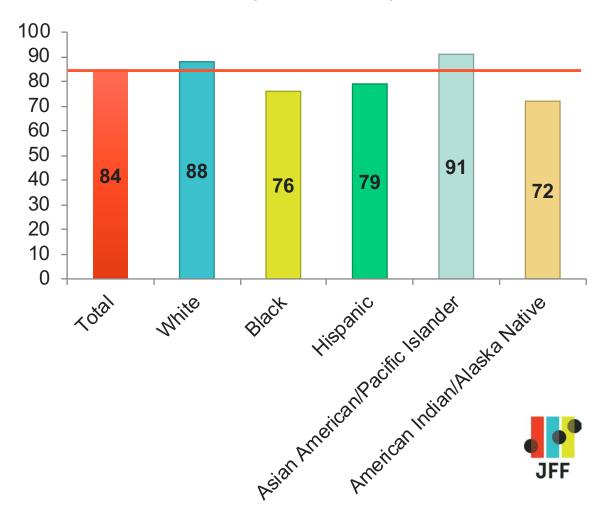
We can and must do better!



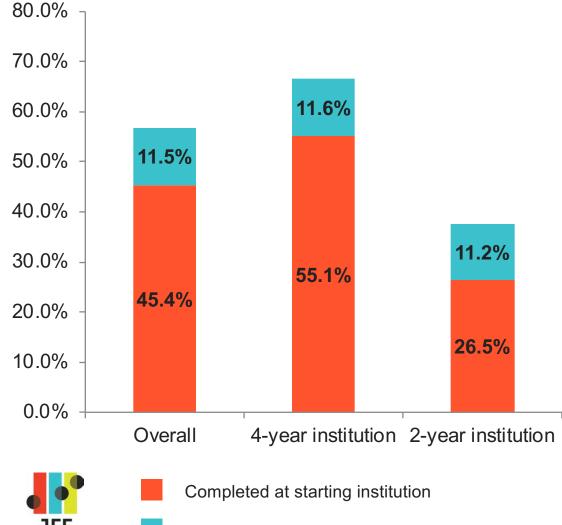
Source: Lumina Foundation, A Stronger Nation report, 2016

# U.S. HIGH SCHOOL GRADUATION RATES

STILL LEAVING TOO MANY BEHIND!! Adjusted cohort graduation rate for public high school students, by race/ethnicity, 2015-16

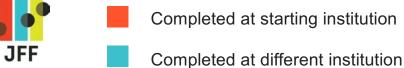


Source: National Center for Education Statistics, 2018. https://nces.ed.gov/programs/coe/indicator\_coi.asp



# **COLLEGE COMPLETION RATES** ARE ALARMINGLY LOW

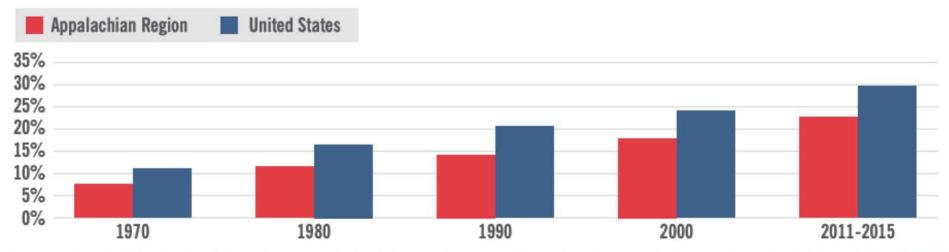
Six-year outcomes for all students who completed at their starting institution or at a different institution



Source: National Student Clearinghouse Research Center, Completing College: A National View of Student Completion Rates - Fall 2011 Cohort, 2017. https://nscresearchcenter.org/signaturereport14/

# MORE APPALACHIANS ARE ATTAINING BACHELORS DEGREE

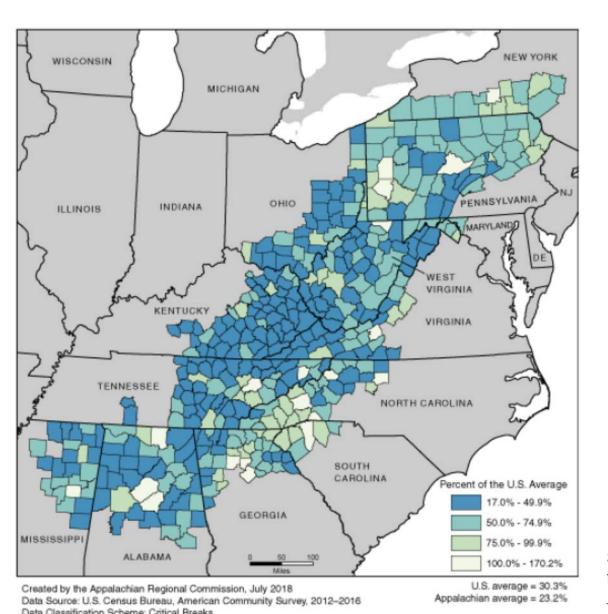
SHARE OF POPULATION >25 YEARS WITH A BA OR HIGHER



Source: Appalachian Regional Commission Analysis of Census Bureau and American Community Survey Data. Available at: https://www.arc.gov/data.



Source: The Appalachia Initiative: A Bipartisan Approach for the 21st Century. The Bipartisan Policy Center, 2017.

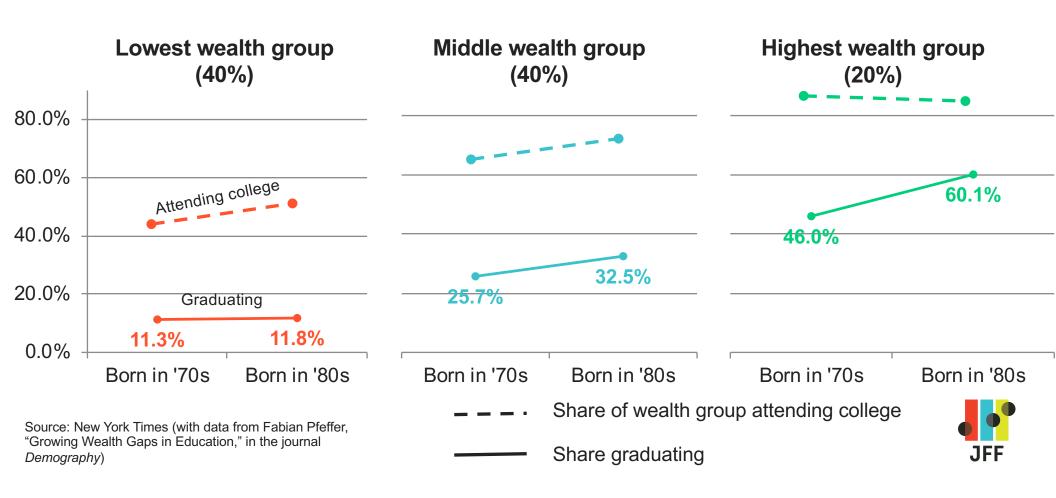


RELATIVE COLLEGE COMPLETION RATES IN APPALACHIA 2012–2016

# YET PERVASIVE SUPPLY-DEMAND GAPS REMAIN

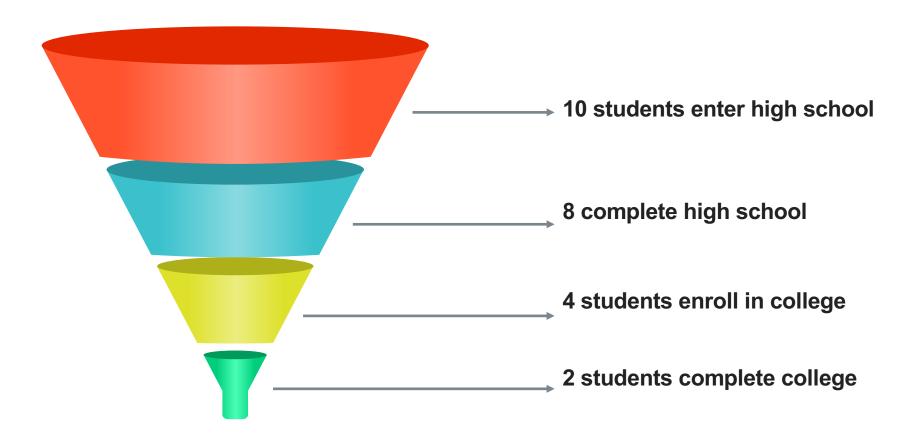
Source: Appalachian Regional Commission. Retrieved 6/14/19 from:https://www.arc.gov/research/MapsofAppalachia.asp?MAP ID=141&PRINT=Y

# MORE LOW-WEALTH STUDENTS GO TO COLLEGE, BUT FEW GRADUATE



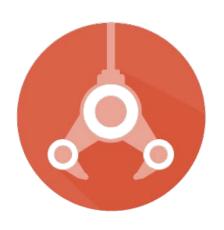
### A (REALISTIC) HYPOTHETICAL SUBGROUP

# IMPLICATIONS FOR COMPLETION





# MAJOR THEMES SHAPING THE FUTURE OF WORK



Automation, Robotics, Al



Employment Status



Nature of Work



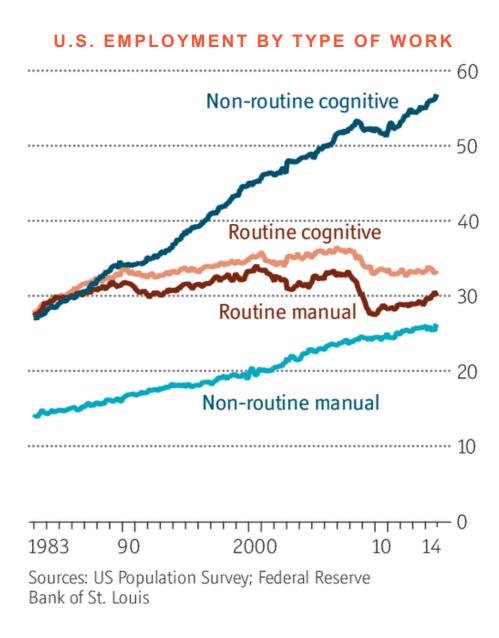
Accelerating Change



# THE ECONOMY IS CHANGING

A shift to a "learning" economy
Disruption is coming (is here?)
Job loss and change
Our institutions are poorly
equipped to keep pace





### **A CONTINUUM**

# RESPONSES TO AUTOMATION



### Nightmares!

"Despite the appearance of many new human jobs, we might nevertheless witness the rise of a new useless class."

Yuval Noah Harari, 21 Lessons for the 21st Century

### Roses!

"If we do it right, we might actually be able to evolve a form of work that taps into our uniquely human capabilities and restores our humanity."

John Hagel



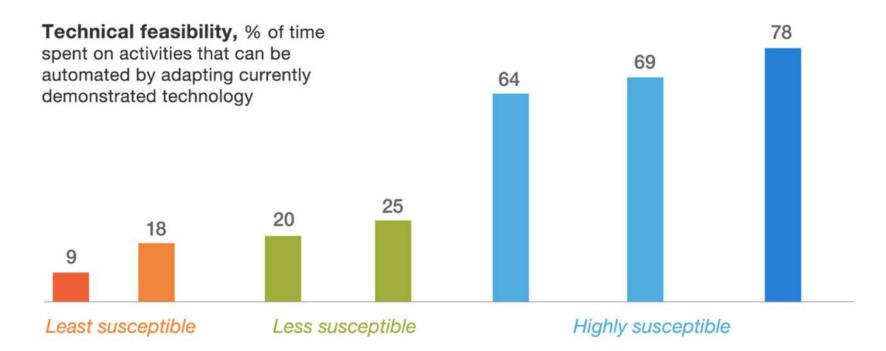


# ONE PERSPECTIVE WE'RE ALL DOOMED!

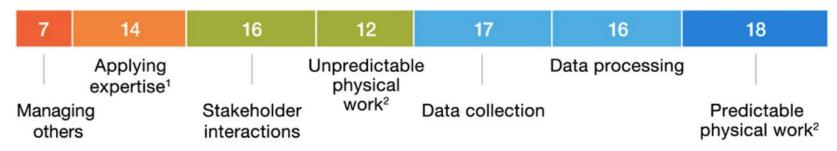
"U.S. factories are not disappearing; they simply aren't employing human workers."

- Moshe Vardi, Director of Rice's Ken Kennedy Institute for Information Technology





Time spent in all US occupations, %





Source: US Bureau of Labor Statistics; McKinsey Global Institute analysis (2016)

### Technical feasibility of automation, %1

### Predictable physical work

# 78%

For example, welding and soldering on an assembly line, food preparation, or packaging objects

### Unpredictable physical work



For example, construction, forestry, or raising outdoor animals



<sup>1%</sup> of time spent on activities that can be automated by adapting currently demonstrated technology.

# SUSCEPTIBILITY TO AUTOMATION

Telemarketers: 99%

Cashiers: 97%

Delivery Drivers: 98%

Restaurant Cooks/Food Prep: 96%

Janitorial Staff: 94%

Hotel Clerks: 94%

Carpenters: 72%

Machinists: 64%

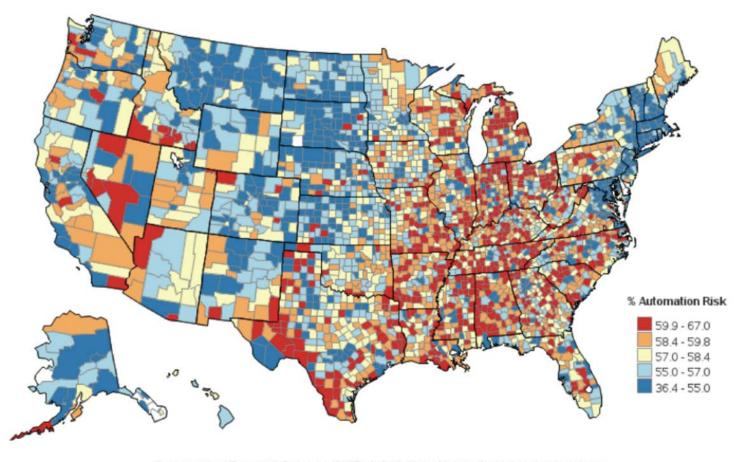
Clergy: 0.8%



McKinsey, 2017; National Bureau of Economic Research, 2017

### APPALACHIA MUST RETHINK SKILLS AND THE FUTURE OF WORK

# US RELATIVE AUTOMATION RISK TO EMPLOYMENT





Data source: Frey and Osborne (2017) & Ball State University authors' calculations



# THE 1099 ECONOMY

A growing share of the economy

Goes beyond the Gig Economy

Growth rate is accelerating



# ALTERNATIVE WORK ARRANGEMENTS

# **EMPLOYERS BENEFIT**

On demand work

Lower costs

Easier to hire/fire







# ALTERNATIVE WORK ARRANGEMENTS

### **EMPLOYEES DO NOT**

Loss of pension

Loss of healthcare

Loss of unemployment insurance

Loss of retirement assistance

No overtime, holiday, or sick leave

Other lost benefits





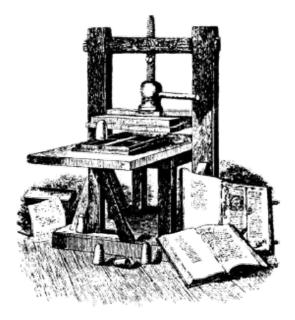


# UTOPIA, HERE WE COME!



### EXTENDING HUMAN CAPABILITY AND UNDERSTANDING

# **AUTOMATION'S RICH HISTORY**









GUTENBERG'S PRESS 1436

FORD ASSEMBLY LINE 1913

THE CLAPPER 1985

GOOGLE TRAFFIC 2007



# ROBOTS WON'T CAUSE UNEMPLOYMENT

Technology has always **created more** jobs than it has lost

Only humans can do certain jobs – particularly ones requiring **creativity and socialization**, with changing and unexpected circumstances

Social, legal and regulatory constraints will mitigate effects on the job market













# ARTIFICIAL INTELLIGENCE CAN EMPOWER US TO DO MORE, BETTER

Less drudgery and more leisure time expected in the future

Al has replaced work, but not workers, who are freed up for higher-level tasks

Choice in how we use technology; Apple, Starbucks, and Uber/Lyft as examples



Source: MIT (2015),

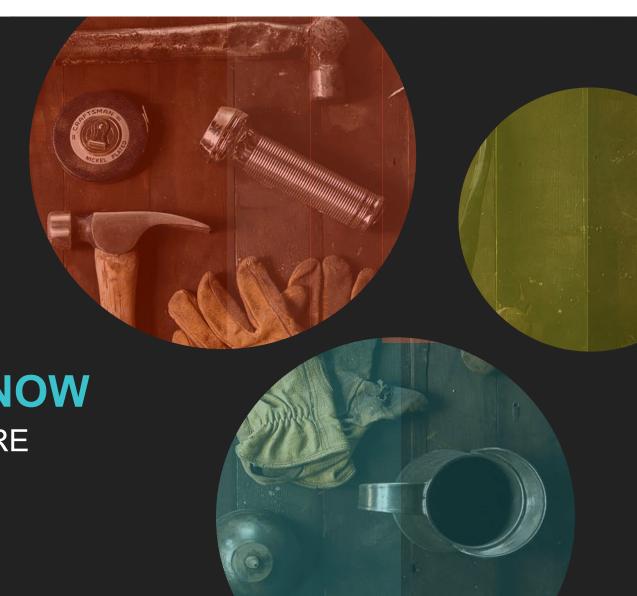
https://www.technologyreview.com/s/538401/who-will-own-the-robots/

# **AUTOMATION MAY BE HARDER THAN WE THINK**

Difficulty of		Percentage of Total	Weighted Average
Automation	Employment	<b>Employment</b>	Wage
Moderate	24,981,910	19%	\$30,556
Difficult	66,829,550	51%	\$40,602
Very Difficult	37,740,880	29%	\$64,991
Total	129,552,340	100%	







WHAT WE DO KNOW

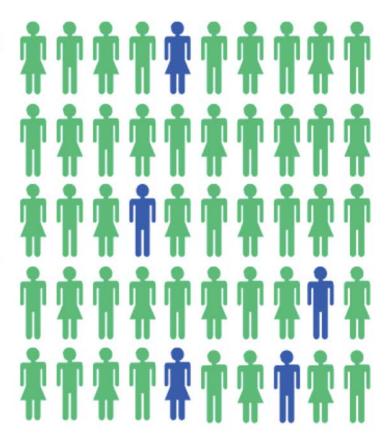
SKILLS FOR THE FUTURE

# 96%

of college academic officers said they are confident in their institution's ability to prepare students for the workforce

# but only 11%

of business leaders agree that today's college graduates have the skills and competencies that their business needs

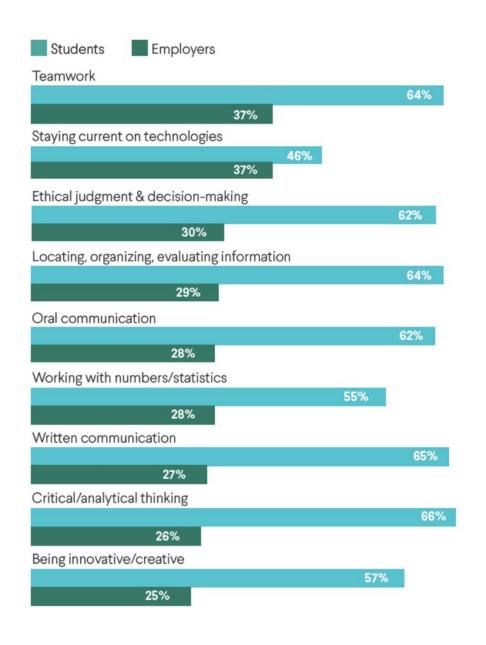


# EDUCATION AND BUSINESS MISMATCH

Gallup Poll of provosts and business leaders uncovers an enormous and concerning gap in perceptions of readiness

Inside Higher Ed, 2014. Ready or Not





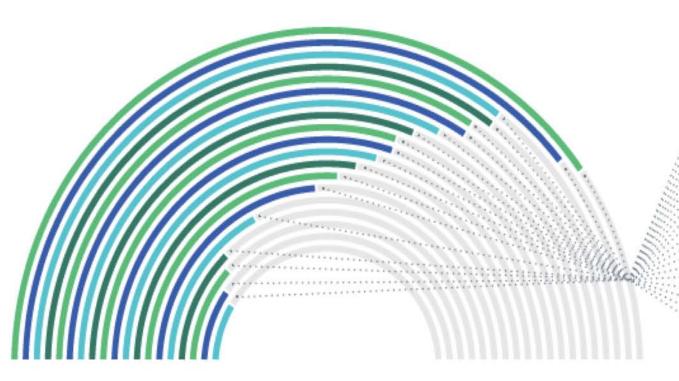
# COLLEGE GRADS AND EMPLOYERS DISAGREE ON WORKFORCE PREPAREDNESS

Percentages represent the number of students/employers who think college grads are highly prepared in these skill areas upon entering the workforce.

Hart Research Associates, 2015. Falling Short? College Learning and Career Success

## **IN-DEMAND SKILLS**



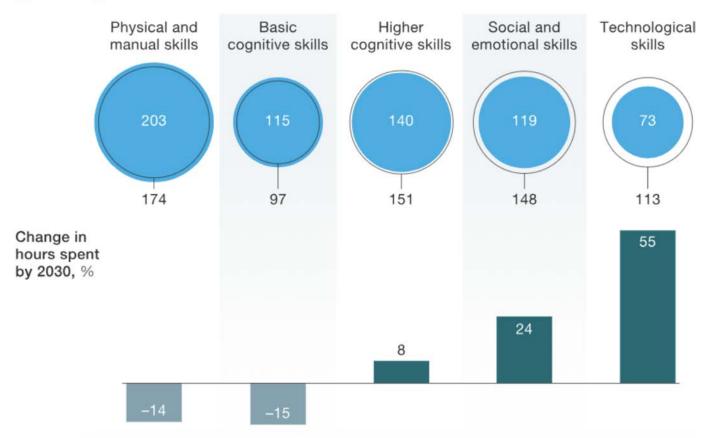


80%	Leadership
79%	Teamwork
70%	Written communications
70%	Problem solving
69%	Verbal communications
69% 66% 63%	Strong work ethic
- 000/	Initiative
63%	Analytical/Quantitative skills
0170	Flexibility/Adaptability
60%	Technical skills
58%	Interpersonal skills
55%	Computer skills
53%	Detail-oriented
49%	Organizational ability
35%	Friendly/Outgoing
27%	Strategic planning skills
24%	Creativity
21%	Tactfulness
19%	Entrepreneurial skills/Risk-taker

## **HOW WILL WORKPLACE SKILLS CHANGE BY 2030?**

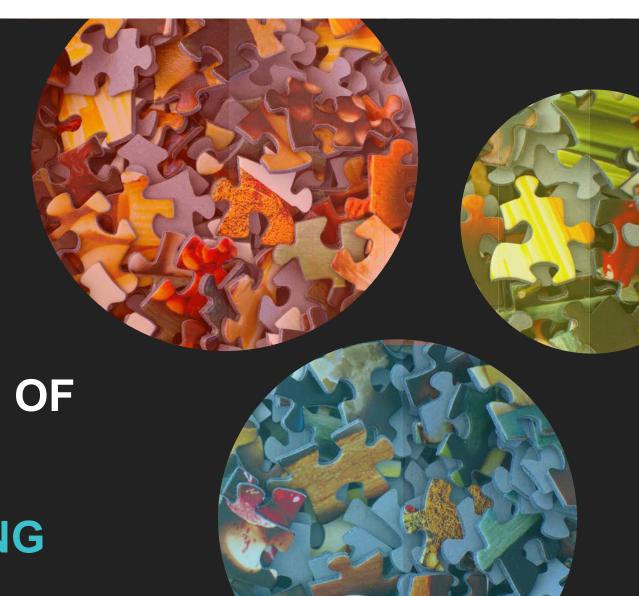
Total hours worked in Europe and United States, 2016 vs 2030 estimate, billion







Source: McKinsey Global Institute Workforce Skills Model; McKinsey Global Institute analysis



THE IMPERATIVE OF WORK-BASED LEARNING AND CAREER ADVISING

## WHAT DOES WORK-BASED LEARNING DO?

Exposes participants to the world of work



Exposes participants to a career field



Strengthens academic learning



Enhances professional skills



Provides a temporary or permanent job



HOW WE
THINK
ABOUT
WORKBASED
LEARNING
MATTERS





## WHY IS WORK-BASED LEARNING SO CRITICAL?

### WIN:WIN SCENARIO

Participants and Employers see benefits

## **EQUITY AND ACCESS**

Increased career prospects and economic mobility

Professional guidance and expertise

### SENSE OF SELF IN RELATION TO CAREER

Not just about skills; not about job training

## **COGNITIVE SCIENCE**

Has a lot to say about this...



## THE TRADITIONAL MODEL OF LEARNING

learn *about* something

learn to be something



## SITUATED LEARNING POSITS AN INVERSTION

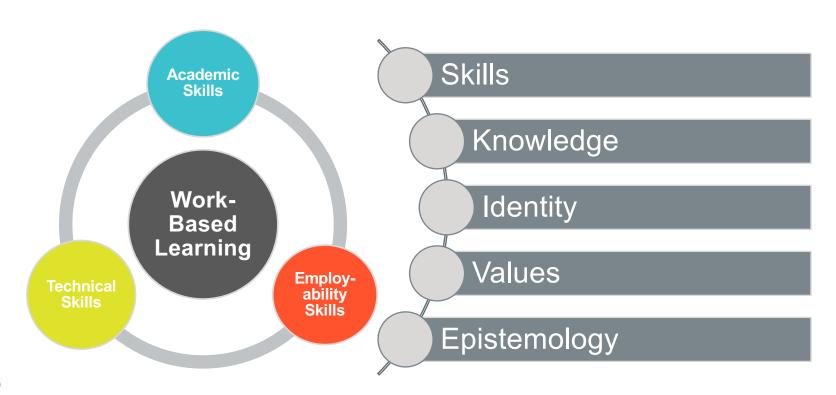
through learning to be

we begin to learn *about* 



(Thomas and Brown, 2009)

## THE PROMISE OF WORK-BASED LEARNING

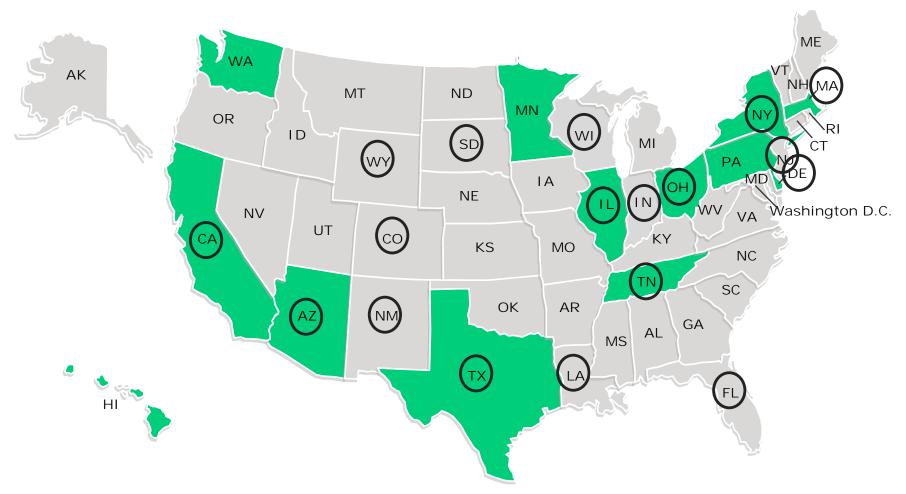




(Shaffer, 2004)



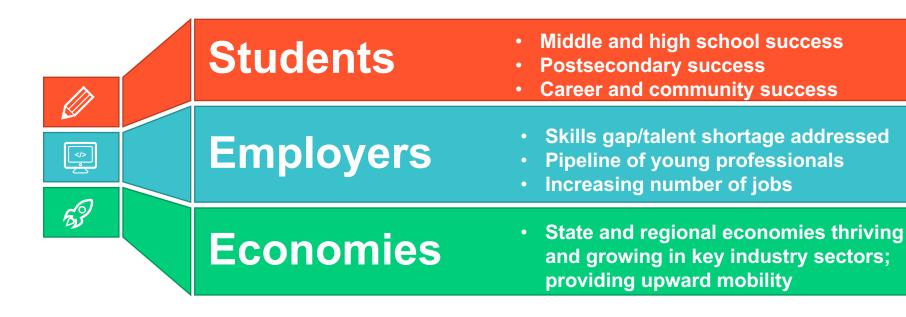
## THE PATHWAYS TO PROSPERITY NETWORK





### PATHWAYS TO PROSPERITY GOALS

## FOCUS ON TRANSFORMATIVE OUTCOMES





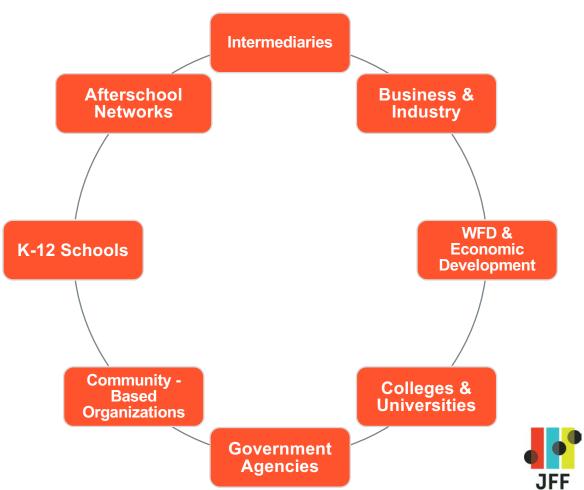




## IT TAKES A (NETWORKED) VILLAGE

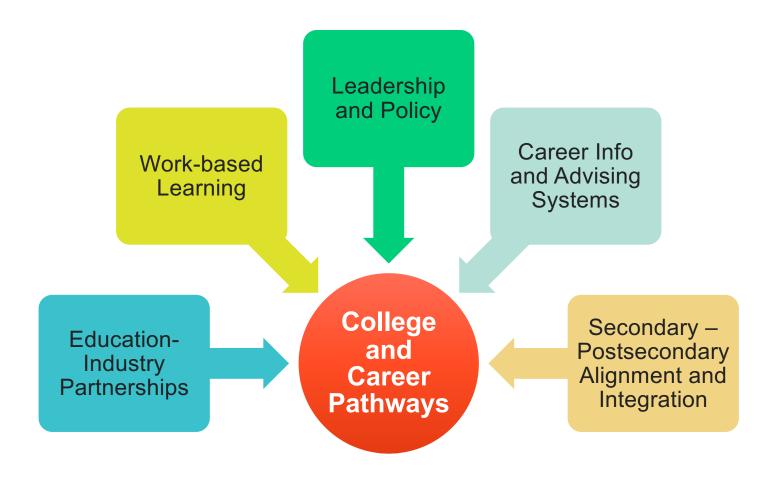
Cross-sector approach to building pathways with clear value proposition for each partner

Aligning grades 9-14+ policy and practice, braiding funding, creating effective WFD systems, leveraging partnerships...



### PATHWAYS TO PROSPERITY NETWORK

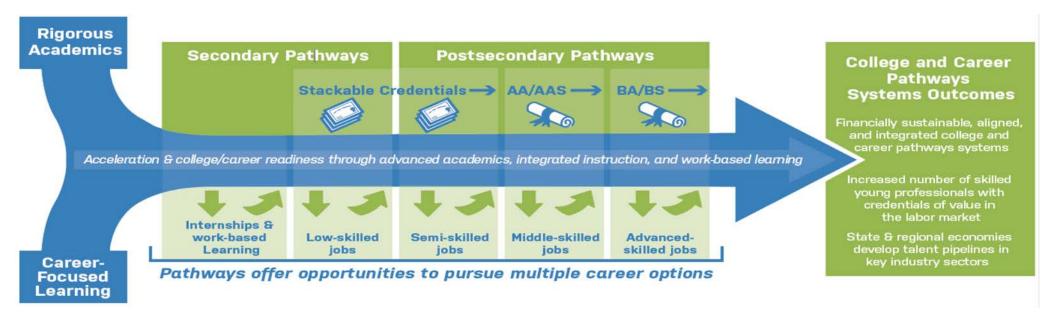
## STRATEGIES FOR IMPLEMENTATION



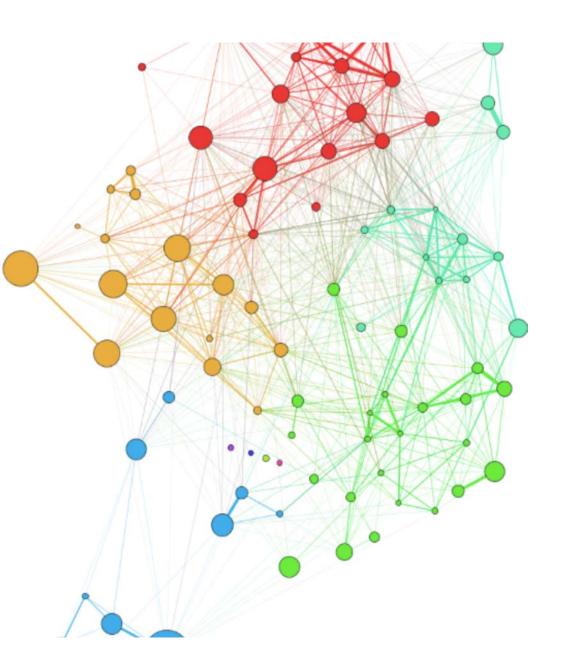


### ON- AND OFF-RAMPS AT MULTIPLE POINTS ALONG THE PATHWAY

## SYSTEMS OF COLLEGE AND CAREER PATHWAYS







## PATHWAYS ECOSYSTEM DESIGN ELEMENTS

**Co-designed** with secondary, postsecondary, and industry/employers

Leverage state and regional policy

Regionally focused; Labor market aligned

Clear secondary-postsecondary programs of study

**Stackable** credentials

Multiple on- and off-ramps

**Integrated** and expanded work-based learning





## **Carroll County, GA**

Cross-sector, regional approach



Carroll County School System

West Georgia Technical College; University of West Virginia

Carroll County Chamber of Commerce (serves as intermediary)

 Made it it's mission to better understand laws and regulations pertaining to youth in manufacturing and health care to support this work









Joined forced to leverage public/private partnership to develop a regional mechatronics and industrial maintenance pathway in Rutherford County, TN

## **Partners**

**Rutherford County Schools** 

Tennessee College of Applied Technology; Middle Tennessee State University

Rutherford County Chamber of College (serves as intermediary)





## Fortune 500 chemical company

Forged a public/private partnership to create the Regional Center for Advanced Manufacturing

## **Partners**

Local school districts

Northeast TN State College

Kingsport Chamber of College (serves as intermediary)



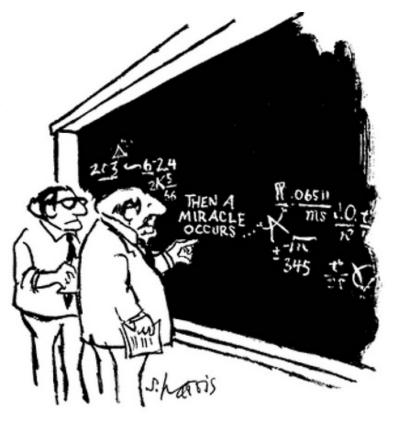
## BUILD ON CURRENT INNOVATIONS AND INITIATIVES

**TechHire Eastern Kentucky (TEKY)** - identifying and developing fast-track training and employment opportunities for workers in the digital economy

Hazard Community and Technical College's Lineman Training Program

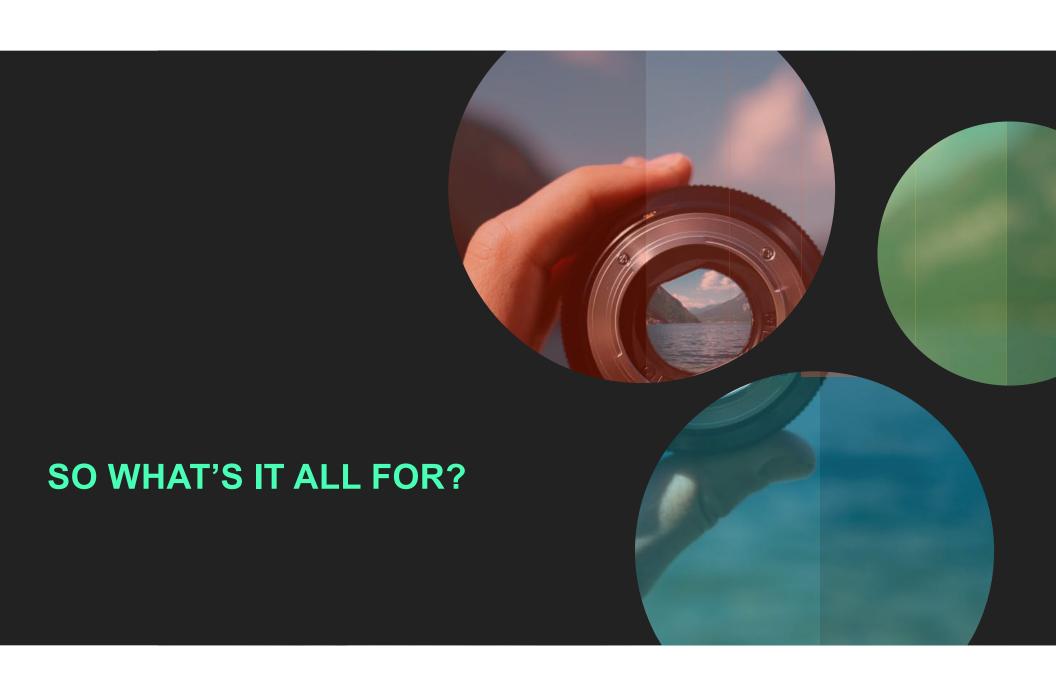
**SOAR** – Diversifying regional economies and supporting communities (e.g., Bitsource; Benham School House Inn; Addiction Recover Care)

West Virginia's Simulated Workplace



"I think you should be more explicit here in step two"











## PREPARING YOUTH TO BE FUTURE-READY

Most young people **get little advice about pathways** from education to careers, and career possibilities.

Few people talk about the **critical role of productive work** in human lives.

Few families understand the **future labor market**—or even the current one.

Teachers typically have **little experience of contemporary high-growth industries** and know little about labor market data and shifts in education and workforce.

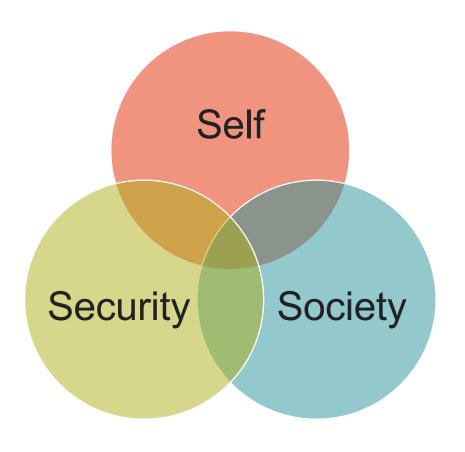








## **LENSES ON THE FUTURE**





### MASLOW'S HIERARCHY OF NEEDS

## AND LET US NOT FORGET ABOUT HAPPINESS

## **Self-actualization**

desire to become the most that one can be

## **Esteem**

respect, self-esteem, status, recognition, strength, freedom

## Love and belonging

friendship, intimacy, family, sense of connection

## **Safety needs**

personal security, employment, resources, health, property

## Physiological needs

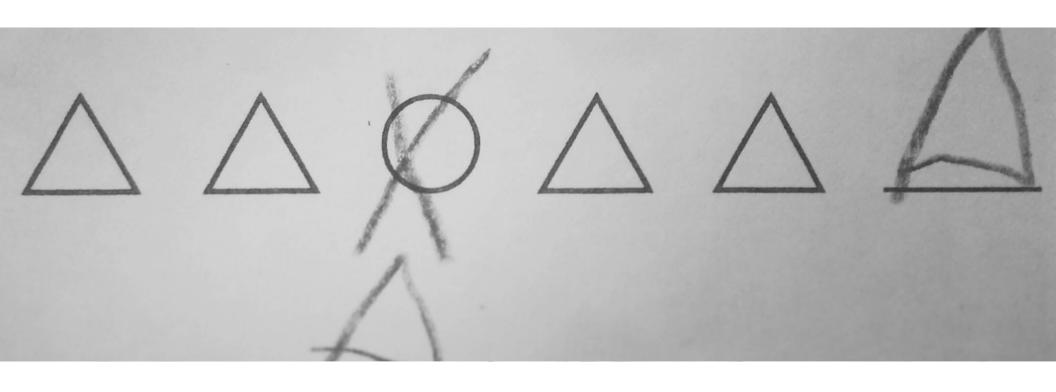
air, water, food, shelter, sleep, clothing, reproduction





## NOT. JUST. FASTER. HORSES.





## NOT. JUST. FASTER. HORSES.



## **THANK YOU!**

www.jff.org | www.ptopnetwork.org



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