

Who am I?



# DISRUPTIVE TECHNOLOGIES AND THEIR IMPACT ON THE FUTURE OF WORK

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March 14, 2018

# AGENDA

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- ▶ What is Advancing AI Wisconsin?
- ▶ What do we mean by Disruptive Technologies and Artificial Intelligence?
- ▶ What impact will they have on the future of work?
- ▶ How do we build a strong Talent Pipeline in an era of Artificial Intelligence?
- ▶ What role might you play? What actions can you take immediately?
- ▶ Q&A



## ELEVATOR SPEECH

Advancing AI Wisconsin is a grassroots initiative to **increase awareness** of a set of technologies often referred to as “Digital Disruption Technologies” and their impact on Wisconsin businesses, workforce needs, educational programming and the State overall.

## MISSION

We enable Wisconsin stakeholders to successfully adapt to the imminent impact of Artificial Intelligence and other Digital Disruption Technologies in the context of the Fourth Industrial Revolution

## VISION

We will create meaningful momentum in discussions and collaboration among and between Wisconsin business and technology leaders, educators, policy makers, and economic development professionals on the topic of Artificial Intelligence and other Digital Disruption Technologies.





# The end of passports? How Australia plans to make travel documents obsolete



4:44

+ Queue

TECHNOLOGY  
'Robo  
Parkir  
January 16, 2017

## Using IoT and machine learning to track the progression of lung

Kathy Henrich @kshenri · Oct 9

Banks team up with IBM in trade finance blockchain [ft.com/content/7dc873...](https://ft.com/content/7dc873...)

via @FT



## ers to Pick Stocks



## gram's Secret Algorithms



Chief Justice John G. Roberts Jr., center, recently said that the day of using artificial intelligence in courtrooms was already here, "and it's putting a significant strain on how the judiciary goes about doing things." Stephen Crowley/The New York Times

## blockchain

nts as they move around the



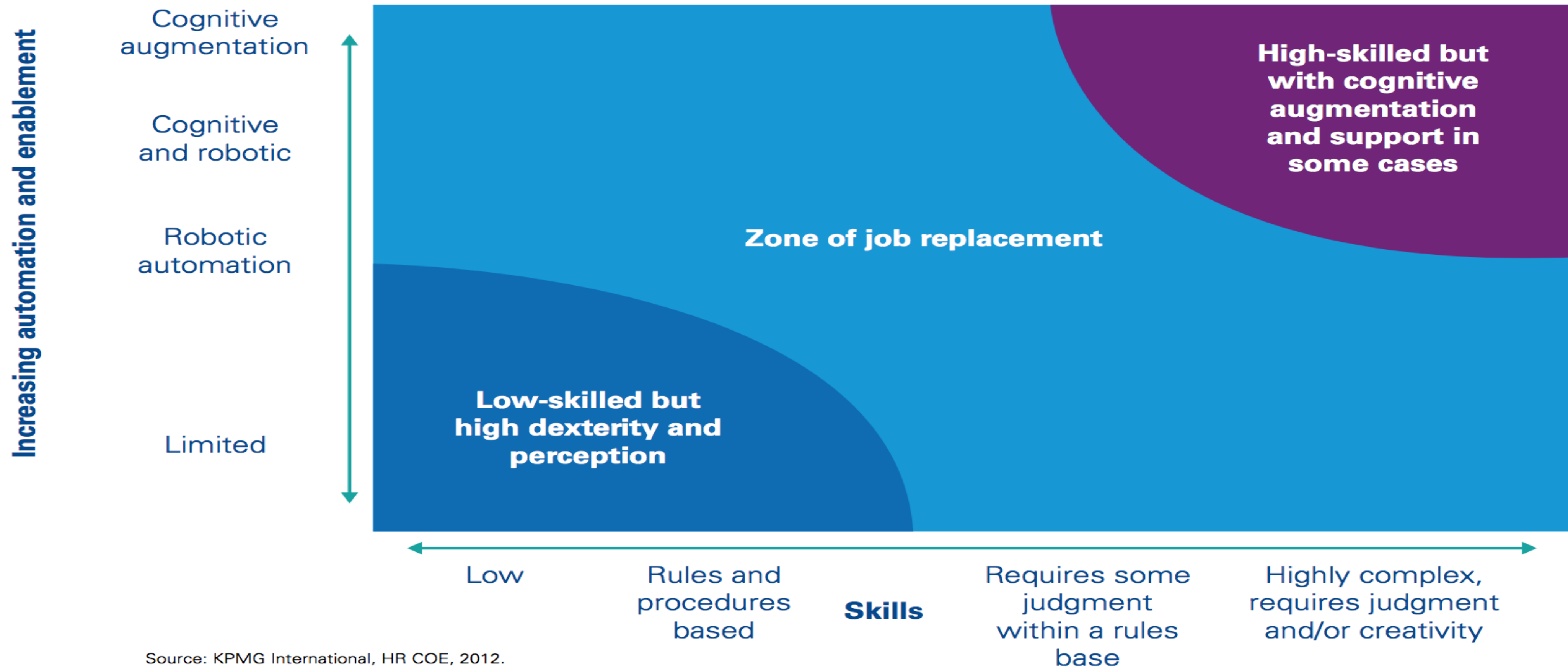
un-sexy yet

lucrative world of logistics. Many saw Uber's entry into freight as a death knell for



# WORKPLACE IMPLICATIONS – JOB LOSSES

**Figure 2: Job impacts of cognitive processing and robotic automation: The hollowing out of the workforce**



# TALENT WHITEPAPER – TOPIC OUTLINE

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- Let Humans Be Humans
- Humans Must Interact With Technology
- Jobs Will Certainly Be Lost
- New Jobs Will be Created
- We Must Prepare!
  - K12
  - Post-secondary
  - Corporate Reskilling
- Building the Future of Work



## Preparing Wisconsin for the Future of Work

Advancing AI Wisconsin - January, 2018 Perspective

Kathy Henrich, Laura Schmidt

Artificial Intelligence has the potential to be extremely disruptive to the labor market. While there are multiple perspectives on the future, a study by Oxford stated that 47% of the current tasks performed by American workers are expected to be automated<sup>1</sup>. AI will have positive impacts, but also will present multiple challenges. On the positive side, according to a study by Accenture, it is anticipated that the annual economic growth rate will nearly double by 2030. This means that like prior automation trends, higher productivity and standards of living will follow. In fact Accenture estimates that productivity will rise by 40%<sup>2</sup>. However, there is no doubt that the transition will be painful for both organizations and individuals whose livelihood is disrupted.

As a result, we need to prepare the next generation of workers (K-University) for the new workplace requirements. In addition, we need to determine how to best re-skill the existing population. This paper is not intended to provide all of the answers, but rather as a basis from which to start the discussion on how to best prepare our workforce of the future for this new reality.

### Let Humans Be Humans!

The World Economic forum states that 65% of children entering primary school today will ultimately end up working in jobs that don't yet exist. So, how do we prepare students? Ultimately, the most important skills will be those which are uniquely human. In the Future of Jobs report, the World Economic Forum put forward the following as top skills that will be required in the future<sup>3</sup>:

<https://advancingaiwisconsin.com/home/talent-whitepaper/>

# SKILLS FOR THE FUTURE

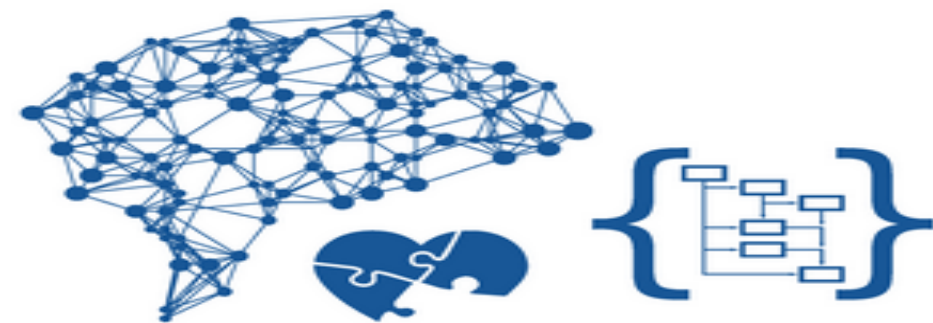
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## Top 10 skills

### in 2020

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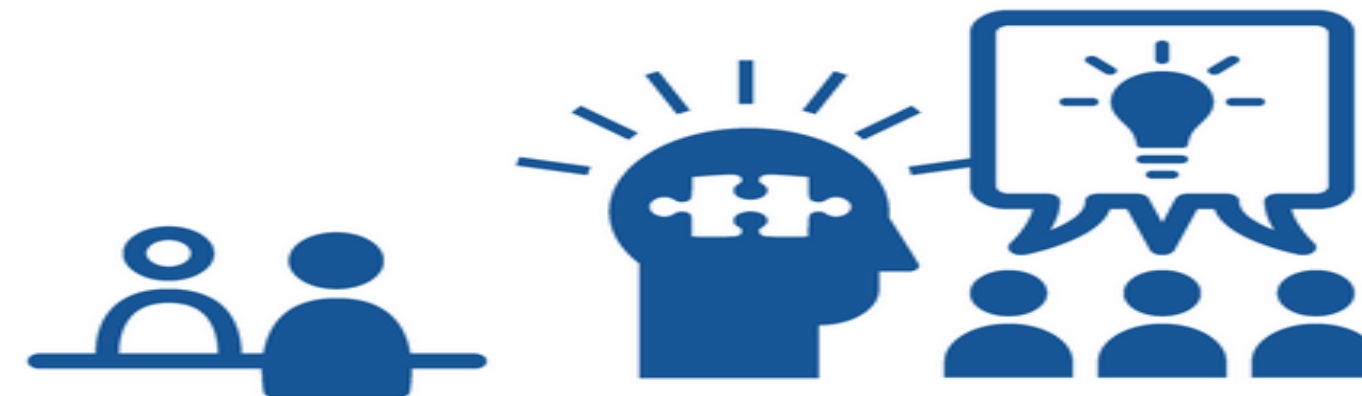
1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility



### in 2015

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1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity



Source: Future of Jobs Report, World Economic Forum



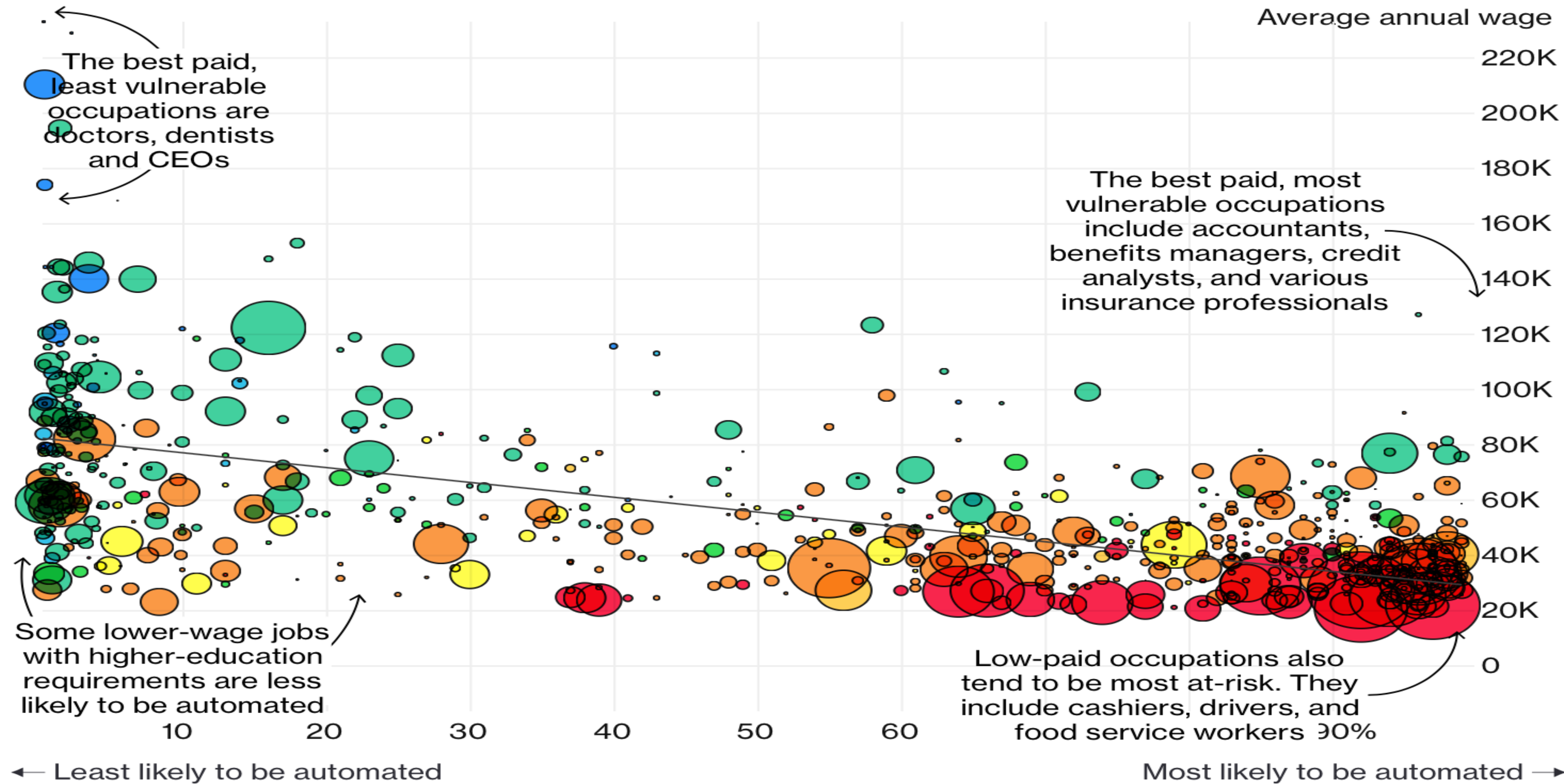
# JOB'S FOR THE FUTURE – CURRENT VIEW

OCCUPATION	GROWTH RATE, 2016-26	2016 MEDIAN PAY
<a href="#">Solar photovoltaic installers</a>	105%	\$39,240 per year
<a href="#">Wind turbine service technicians</a>	96%	\$52,260 per year
<a href="#">Home health aides</a>	47%	\$22,600 per year
<a href="#">Personal care aides</a>	37%	\$21,920 per year
<a href="#">Physician assistants</a>	37%	\$101,480 per year
<a href="#">Nurse practitioners</a>	36%	\$100,910 per year
<a href="#">Statisticians</a>	33%	\$80,500 per year
<a href="#">Physical therapist assistants</a>	31%	\$56,610 per year
<a href="#">Software developers, applications</a>	30%	\$100,080 per year
<a href="#">Mathematicians</a>	29%	\$105,810 per year
<a href="#">Bicycle repairers</a>	29%	\$27,630 per year
<a href="#">Medical assistants</a>	29%	\$31,540 per year
<a href="#">Physical therapist aides</a>	29%	\$25,680 per year
<a href="#">Occupational therapy assistants</a>	29%	\$59,010 per year
<a href="#">Information security analysts</a>	28%	\$92,600 per year
<a href="#">Genetic counselors</a>	28%	\$74,120 per year
<a href="#">Operations research analysts</a>	27%	\$79,200 per year





# EDUCATION IS THE BEST PROTECTION



DATA: FREY & OSBORNE, BUREAU OF LABOR STATISTICS

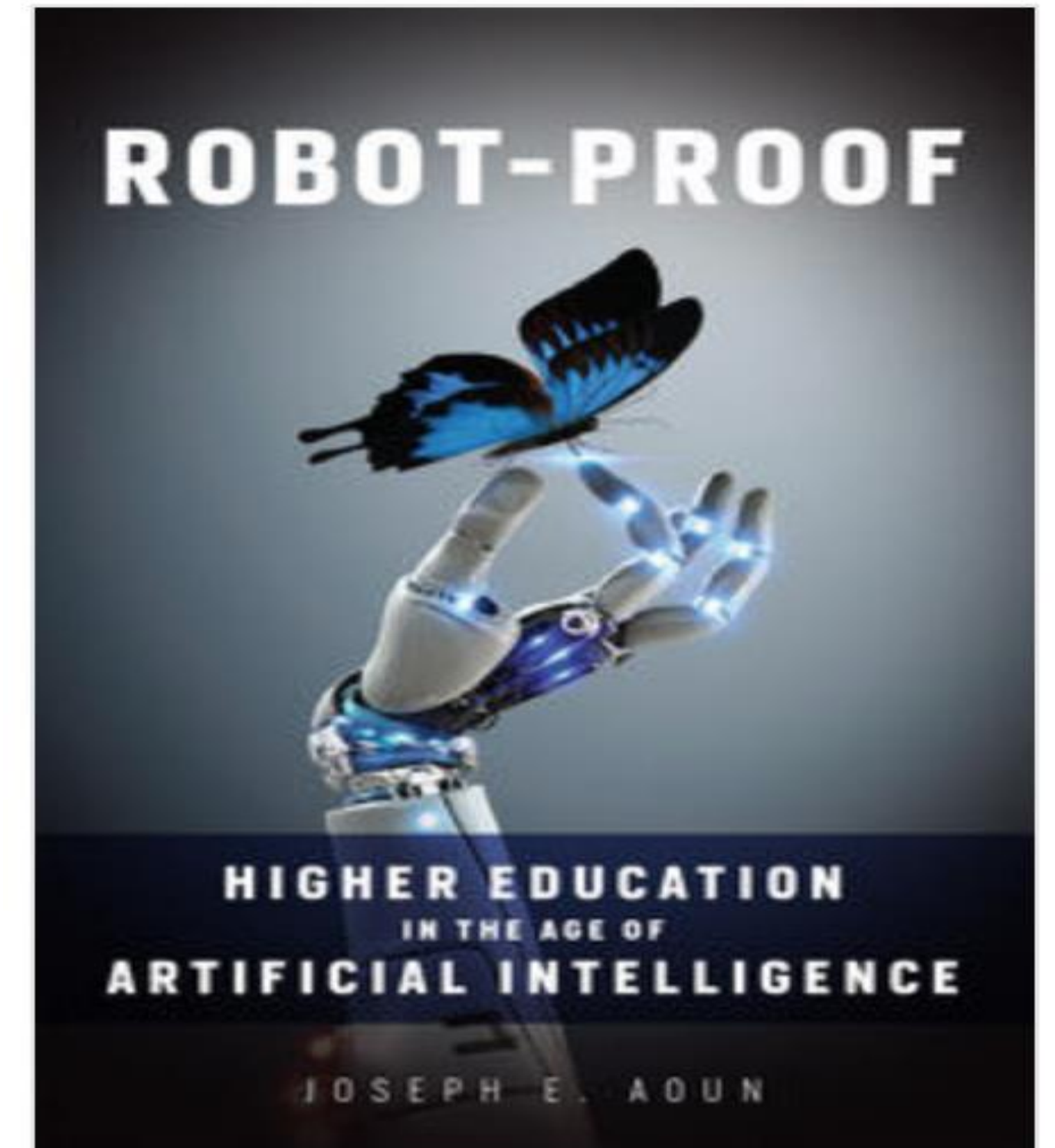
● Doctoral or Professional Degree ● Master's ● Bachelor's ● Associate's  
● Postsecondary Nondegree Award ● Some College  
● High School Diploma or Equivalent ● No Formal Education Credential

# SKILLS FOR THE FUTURE: HUMANICS

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Data Literacy  
Technological Literacy  
Human Literacy

Developed through Experiential Learning



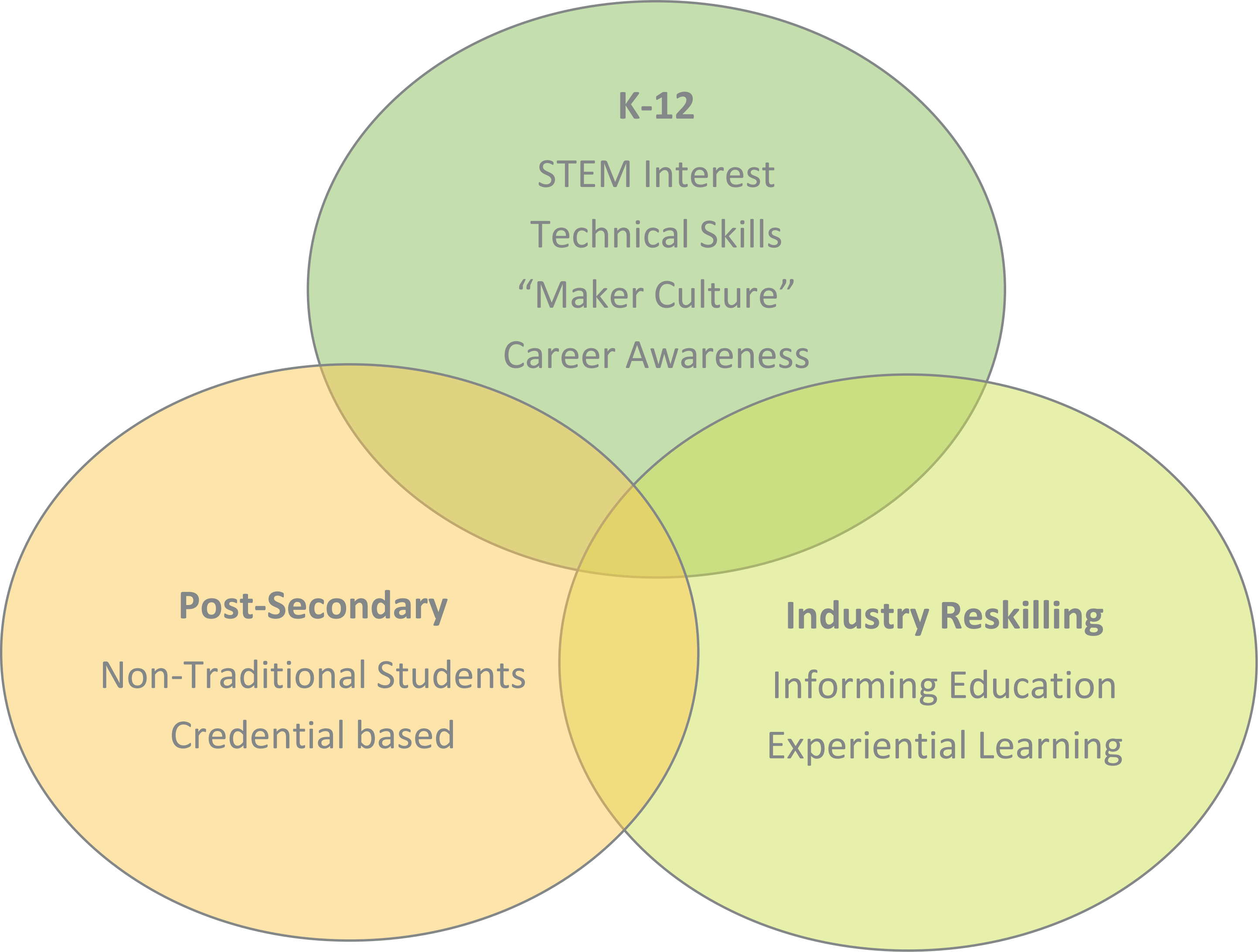
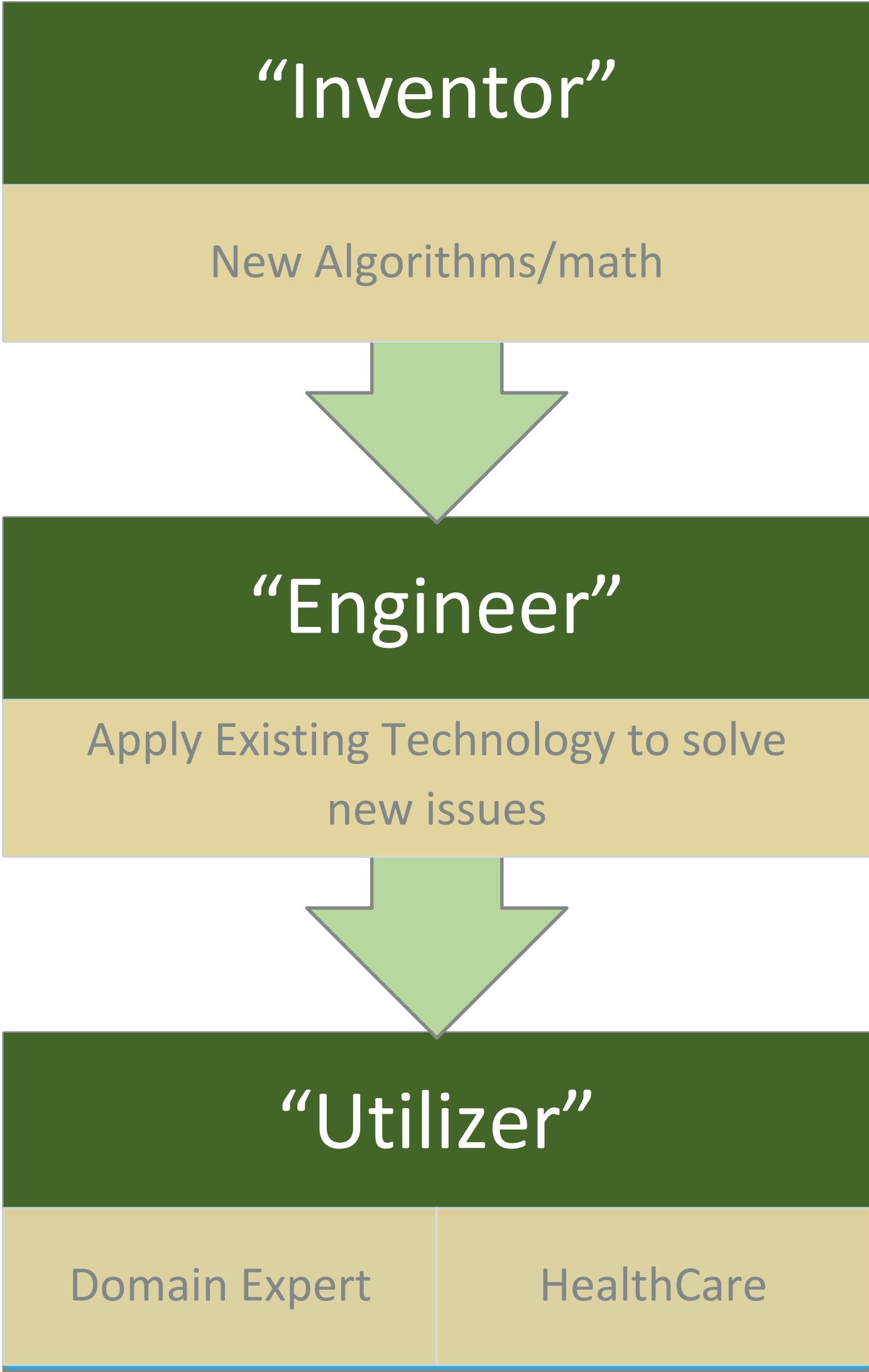
## Feb 14: Testimony to IT Subcommittee.

Dr Charles Isbell from Georgia Institute of Technology had a similar response when asked about skills that all college students need to prepare for AI:

1. Computing Skills
2. Statistics
3. Data Literacy



# AI SKILLS PIPELINE: INTERDEPENDENCE



# AS YOU START .....WHAT IS THE INTEREST OF THIS

## SESSION?

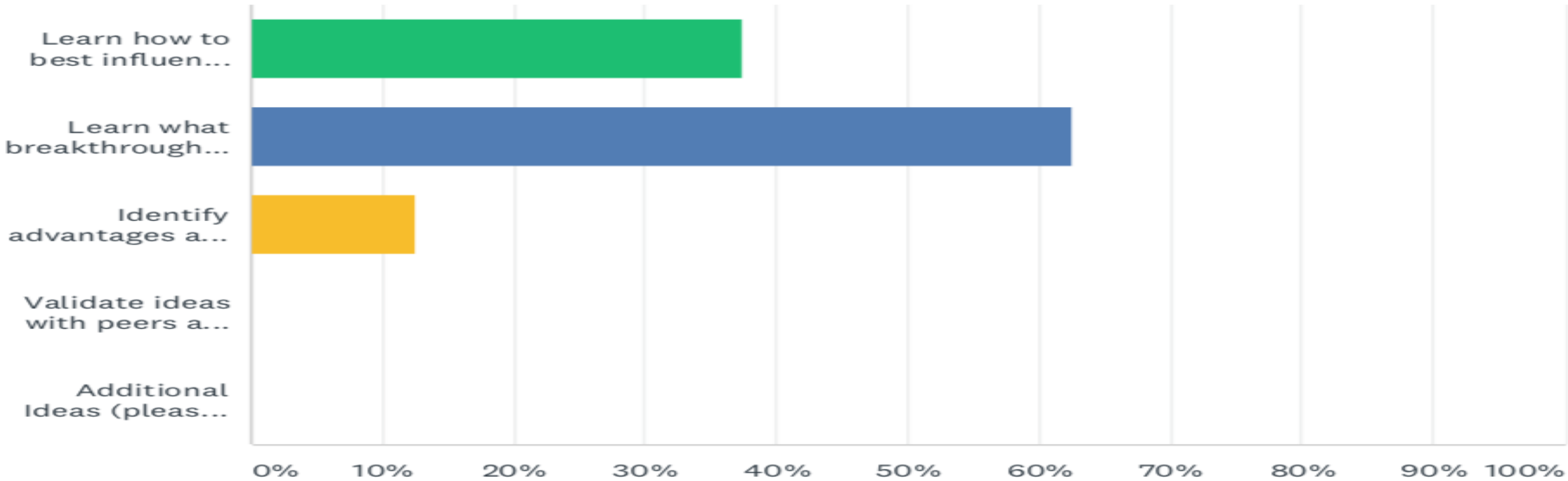
Q5

Customize

Export ▼

21st Century Leadership – Focus on Talent This session will provide an opportunity for gaining insights and shared benchmarking and best practices around talent pipeline development and re-skilling teams. Leave with specific ideas for creating success in highly competitive spaces and for optimizing recruitment and retention strategies.

Answered: 8 Skipped: 8



### ANSWER CHOICES

- ▼ Learn how to best influence and change organization culture in order to create truly innovative organizations
- ▼ Learn what breakthrough innovation organizations are doing to acquire and retain talent
- ▼ Identify advantages and tactics for re-skilling your current workforce
- ▼ Validate ideas with peers and generate insights
- ▼ Additional Ideas (please specify)

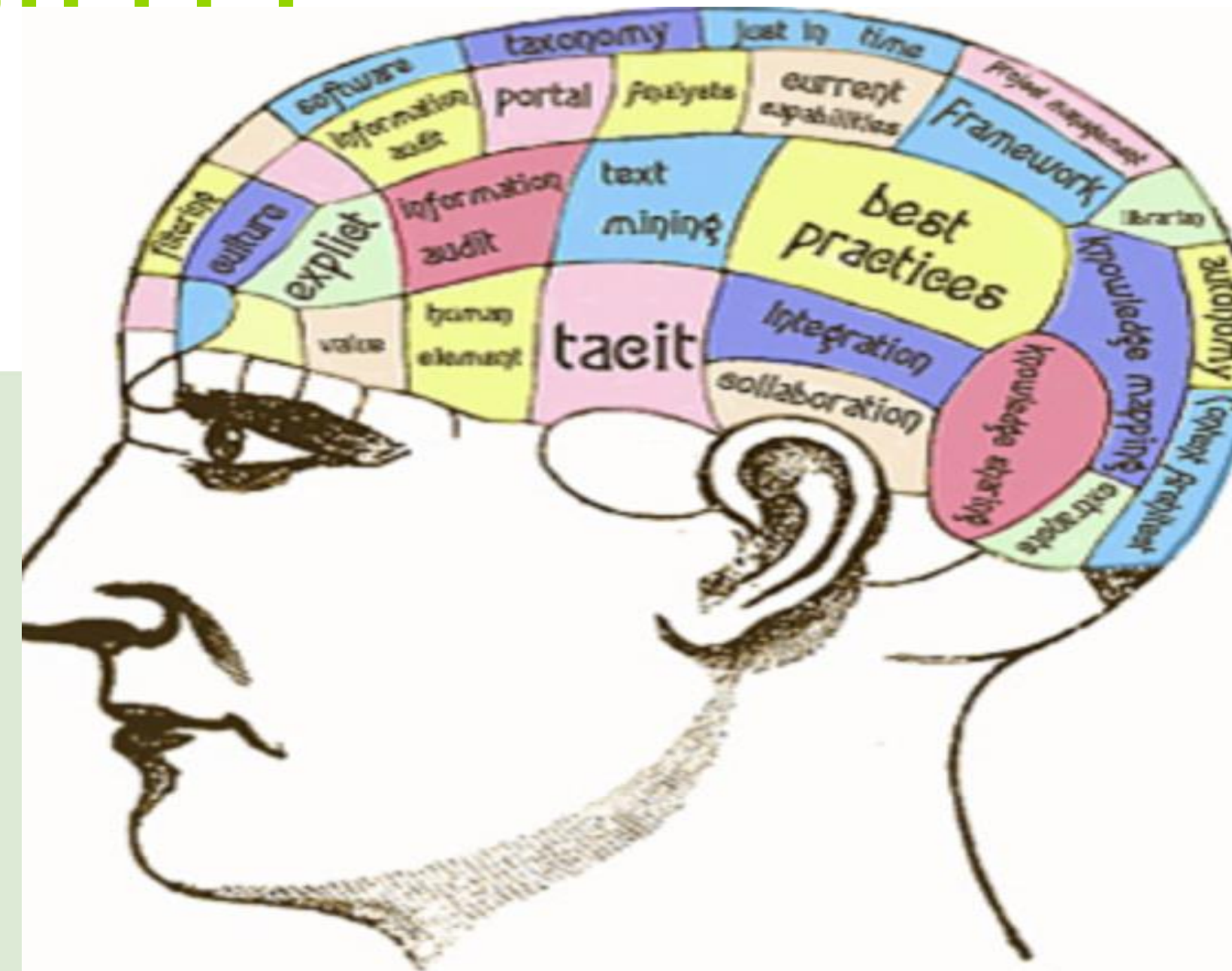
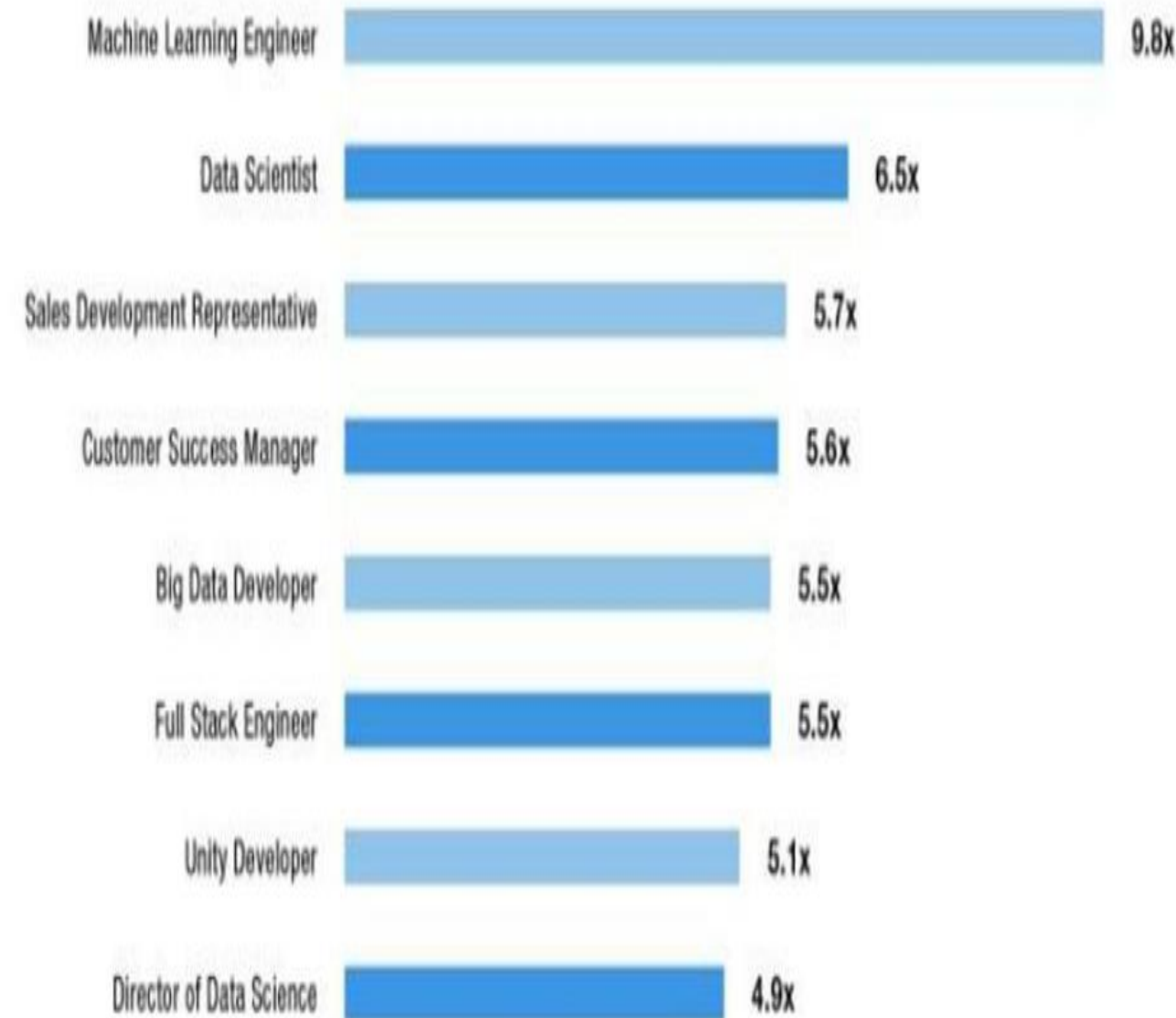
Response



# OPTIONS TO ACQUIRE AI ABILITY

Top 20 Emerging Jobs

LinkedIn Economic Graph



## BUY

Linkedin: 9x growth in last 5 years

Tencent: At least 3x growth in next 3 years

JFG: Data Scientists are new "pro athletes"

## BUILD

Domain Expertise required to train the data for industry specific

Design Thinking, Artificial Intelligence Capabilities, etc.

Experiential learning, agile

## OUTSOURCE

Integration into SAP, Salesforce, Workday, etc.

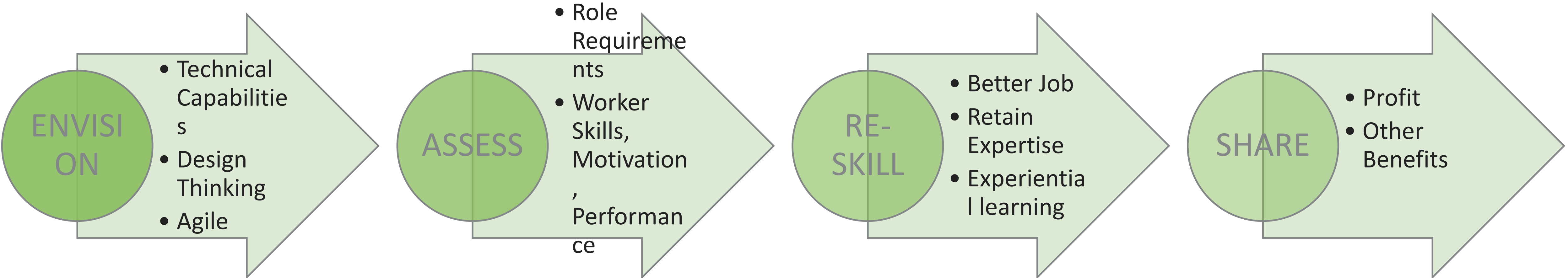
IT Outsourcers integrating into helpdesk, service management



# KSH VIEW OF RE-SKILLING



## Agile, Innovation Culture



## Transformational Leadership Skills





# RECOMMENDATIONS:

Get Educated

Identify of New Opportunities for Experimentation

Engage with Local Schools (K-12, Tech, Post-Secondary)

Stay Connected to Advancing AI Wisconsin

Twitter: @AdvancingAIWI

LinkedIn: <https://www.linkedin.com/groups/8636828>

Join our mailing list: <https://advancingaiwisconsin.com/> (bottom of page)

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# APPENDIX



# RESEARCH...

## ***PwC economists assess how and when workers will be affected by coming waves of automation***

*Feb 06, 2018*

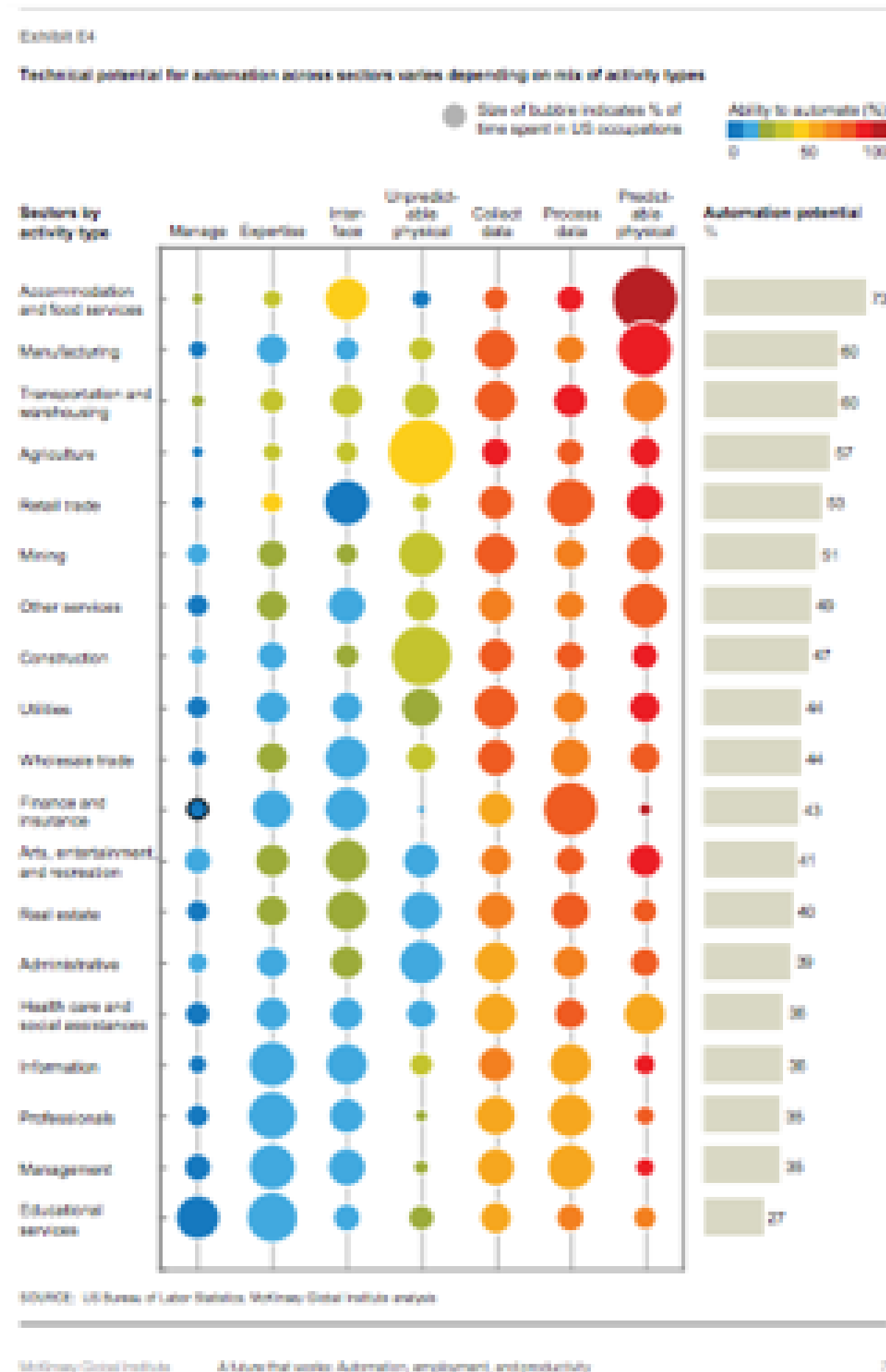
Wave	Cumulative % of UK jobs that could be impacted by automation	% of women that could be impacted	% of men that could be impacted
Algorithm wave - to early 2020s	2-3%	4%	1%
Augmentation wave - to late 2020s	20%	23%	17%
Autonomy wave - by mid 2030s	30%	26%	34%

*Source: PwC estimates for the UK based on OECD PIAAC data*

**We don't believe that automation will lead to mass technological unemployment by the 2030s any more than it has done in the decades since the digital revolution began.....But we should not be complacent about the coming waves of automation: *there will be challenges to many workers to adapt to these changes through enhancing their skills and retraining for new career in some cases.....***"

**- John Hawksworth, Chief Economist at PwC**

# RESEARCH...



**About half the activities...have the potential to be automated by adapting currently demonstrated technology.....**

**While less than 5% of all occupations can be automated entirely....about 60% of all occupations have at least 30% of constituent activities that could be automated....**

**More occupations will change than will be automated away.**



# ROLE OF ADDITIONAL STAKEHOLDERS



## Government

- Reskilling Incentives
- Tax Policy
- Immigration Policy



## Labor Unions

- Apprenticeships
- Reskilling



## Workforce Development

- Inclusive vs. Exclusive
- Reskilling recommendations
- Catalyst with all stakeholders