



# STEM Pathways for the Future of Work

Betty Hart, M.A.,  
IMSA Innovation Program Manager



*Steve and Jamie Chen*  
Center for  
Innovation & Inquiry

November 7, 2019

# me



Born &  
Raised.  
Multi-  
cultural



Jack of  
all trades  
Master of none



Veteran.  
Spouse.  
Mentor.



First  
Generation  
Education



Creator.  
Servant.  
Champion.

# Today's Destination





When I grow up I want to be a(n)...

Did you reach your destination?

If no, why not? If yes, how?



Can we anticipate what the **Future of Work** will look like? How do we educate our students to take their place in the **Future Workforce**?

Source: <https://www.cognizant.com/futureofwork>



# Destination



**past  
ways**



**future  
skills**



**pathways to  
innovation**



**icebreaker**



**end  
route**



**group  
collaboration**

***“Educational pathways are **LARGELY** disconnected from the job market, which inhibits students’ ability to see their future career pathways lucidly.*”**

***Policymakers, postsecondary officials and students are not provided with data that keeps them informed.”***

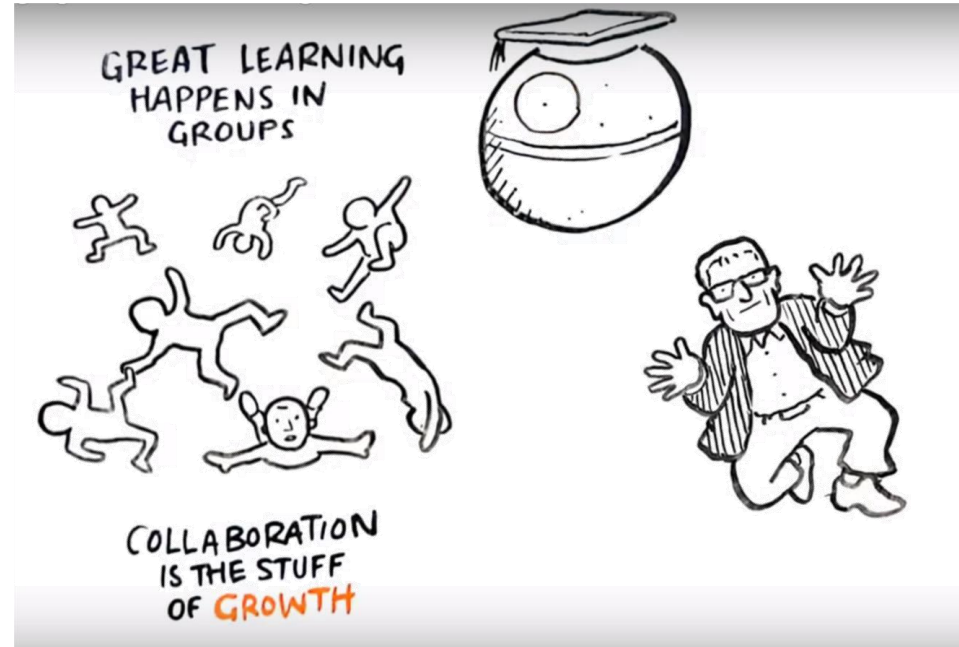
Anthony Carnevale  
Director of the Georgetown University  
Center on Education and the Workforce

Source: Brookings Role of AI in Education | Brookings

## 3 past ways - pain points of learning

- Globalization will challenge economics and cultural identity.
- Economics + Intellect = Inequality
- Innovation + Collaboration = Inclusive Learning

Sir Ken Robinson



Changing the Education Paradigm



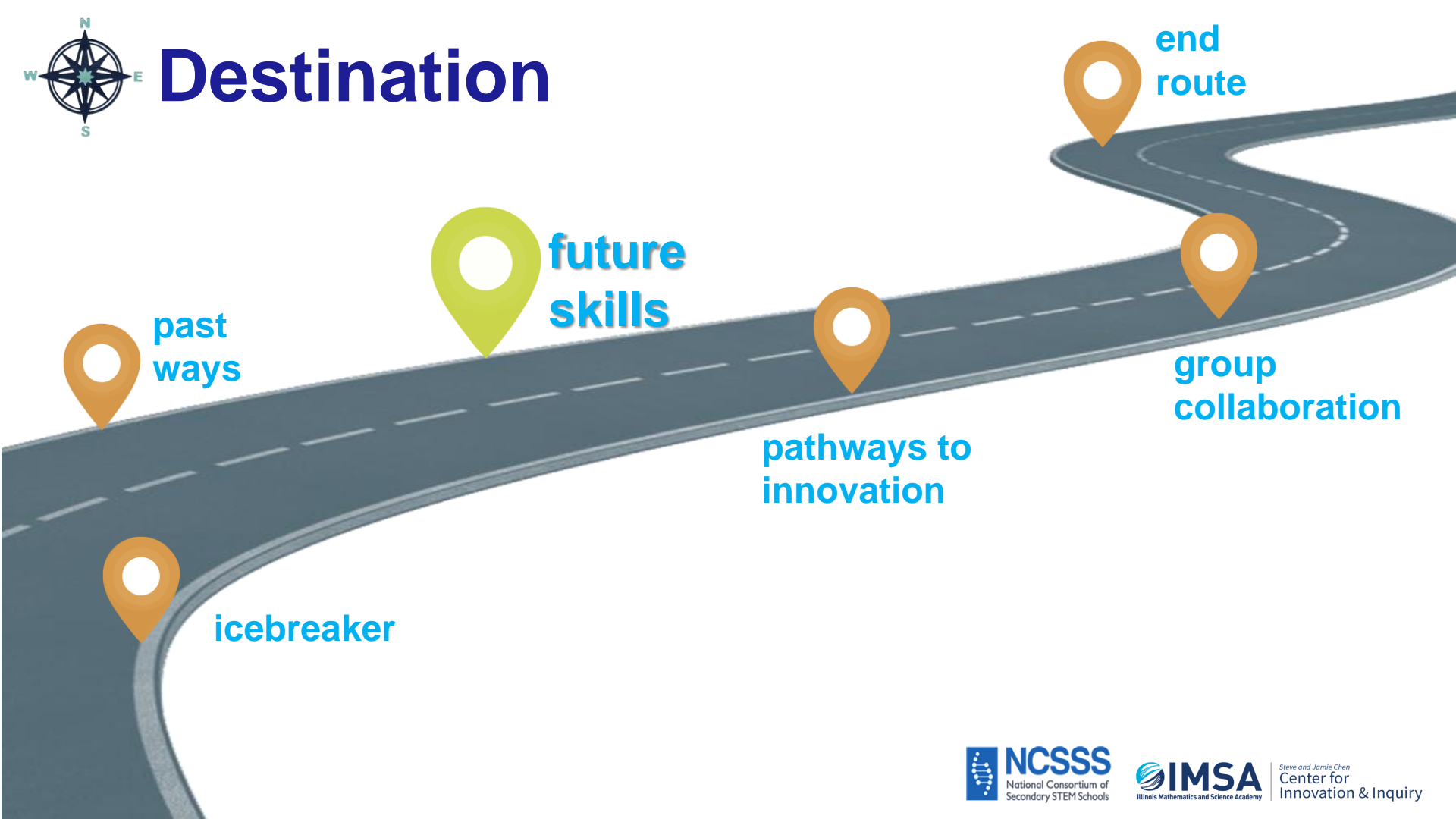


# AT THE CUSP OF THE 5<sup>TH</sup> INDUSTRIAL REVOLUTION

Recent rapid adoption and application of artificial intelligence algorithms — triggered by access to big data and better hardware-processing capabilities — are changing the face of blue and white collar jobs.



# Destination



# skills. skills. skills.

## Power Skills

Creativity  
Communication  
EQ/Empathy  
Collaboration  
Design Thinking



## Technical Skills

Cloud Computing  
Digital Literacy  
AI/Machine Learning  
Data Analytics  
Robotics/Automation



## STEM Skills

Innovation/creativity  
Communication  
Collaboration  
Critical Thinking  
Design Thinking



## building power skills

- How can students demonstrate skills?
- How do students articulate skills?
- How do you introduce real world awareness & exploration?
- Do your students have access to mentors, coaches, champions?
- ...what about **YOUR Skills**?



# Destination



past  
ways



future  
skills



pathways to  
innovation



icebreaker



end  
route



group  
collaboration

# pathways to innovation

## Network

Alumni  
Business Partners  
Community Partners  
Residential Life

## 20% time

Student Inquiry Research  
Internships  
Project Teams  
Independent Study

## Programs

Entrepreneurship  
LEAD  
Allies  
I & D (Think-a-thons)

## Opportunities

STEM Pathways Program & City of Aurora Smart Cities



# innovation | smart cities youth

- Partnership with Aurora IL, America's next Smart City, to develop their Smart City Youth Alliance
- **Integrate** | Urban challenges into current education structure
- **Empower** | Student contributions toward innovation around Smart Cities
- **Sustain** | Smart cities initiatives for the next millennium



# STEM pathways program



## College & Career Pathways Endorsements

- Career Development Experience
- Career Exploration Activity
- Team-Based Challenge
- Work-based Learning





# Destination

past  
ways

future  
skills

pathways to  
innovation

end  
route

group  
collaboration

icebreaker

# STEM pathways roadmap



Route | identify your institutions  
skill/competency offerings to  
guide students to a successful  
college-career experience

Resources | Postsecondary & Workforce Readiness Act  
Statewide Public-Private Steering Committees for College and  
Career Pathway Endorsements Recommended Essential  
Employability and Technical Competencies



# you have arrived



Questions?  
Thoughts!  
Suggestions.  
Feedback...

# contact me

## Betty Hart @



*Steve and Jamie Chen*  
Center for  
Innovation & Inquiry



[bhart@imsa.edu](mailto:bhart@imsa.edu)



[www.imsa.edu](http://www.imsa.edu)



[Linkedin.com/in/bettyhart](https://www.linkedin.com/in/bettyhart)

# Sources

- Pring, B., Brown, R., et. al. (2017). 21 More Jobs of the Future thru 2029, Cognizant Center for the Future of Work, retrieved from <https://www.cognizant.com/futureofwork>
- Zao-Sanders, M., Palmer, K. (2019). Why even new grads need to reskill for the future, Harvard Business Review, retrieved from <https://hbr.org/>
- Robinson, Sir Ken (2010). Changing the Education Paradigm, *Ted Talk*, retrieved from <https://www.ted.com/>
- Levesque, E.M (2018). Role of AI in Education and the Changing Workforce. *Brookings Report*, retrieved from <https://www.brookings.edu>
- Lanahan, L. (2019). Need a college degree to get a job? These companies say skills matter. *The Hechinger Report*, Retrieved from <https://www.nbcnews.com/>
- Orijako, C. (2018). A Look at STEM Jobs in the Labor Market. *US Bureau of Labor and Statistics*, webinar November 8, 2018.
- Pegues, M. (2019). 605 Innovation District, Smart Cities Aurora IL. Retrieved from <https://smartaurora.com/>
- Postsecondary & Workforce Readiness Act | Statewide public-private steering committees for college and career pathways endorsements. Recommended essential employability and technical competencies. Retrieved from [www.pwract.org](http://www.pwract.org)