The Future of (No) Work: Artificial Intelligence and UC’s Response

A Forum for UC Faculty

Hosted by UC Forward
with support from CET&L, Taft Research Center, the Niehoff Urban Studio, and the Otto M. Budig Family Foundation
Today’s Emcee:
David Adams,
UC’s Chief Innovation Officer
and CEO of the UC Research Institute
Forum Goals:

- Reflect on the **dramatic impacts** of Artificial Intelligence and related technologies on our society and our economy, and especially on the future of work
- Gain an understanding of the **challenges** Artificial Intelligence poses to the mission and relevance of higher education, including to UC
- Begin a conversation among faculty members on how we **confront these challenges** in our curricula, pedagogy, and research
Premises:

- The trajectory of A.I.’s development isn’t certain, but it’s developing rapidly, converging with other technologies, and already is having an impact on many business sectors and types of work.
- Our students face a dramatically different world of work – one that demands different preparation than higher education, in general, currently provides.
- If UC and other institutions of higher education are to remain relevant, we must develop new educational strategies and content.
- Our research programs in nearly every field will need to change to reflect the opportunities and threats of A.I.
Schedule

2:15: Keynote presentation by Lee Rainie
3:05: UC faculty responders
3:40: UC Talks competition
4:40: Secret ballot voting on UC Talks presentations & invitation to CETL reading groups
5:00: Announcement of UC Talks winners
5:05: Provost Kristi Nelson – “Rising to the Challenge”
5:15: Adjourn to Happy Hour at Taste of Belgium

Program is continuous. Coffee & tea available throughout program. Restrooms in hall and on lower level.
Our Keynote Speaker: Lee Rainie

Director of Internet & Technology Research at Pew Research Center, author of *Artificial Intelligence and the Future of Humans*, former managing editor at *US News & World Report*
The future of higher education

Lee Rainie
Director, Internet and technology research

Email: Lrainie@pewresearch.org
Twitter: @Lrainie
“Regularizors” and “priors” that analyzed Messier 87
One Month, 500,000 Face Scans: How China Is Using A.I. to Profile a Minority

In a major ethical leap for the tech world, Chinese start-ups have built algorithms that the government uses to track members of a largely Muslim minority group.

1) At the neighborhood gate video cameras are set up. If they recognize Uighurs, Tibetans, or other sensitive peoples, they will generate a key sensitive persons face-photo database, and in real time pay attention to these sensitive people’s entry and exit records and their movements (integrating with the city’s closed face-photo database).

2) If the number of sensitive groups of people in the neighborhood increases (for example, if originally one Uighur lives in a neighborhood, and within 20 days six Uighurs appear), it immediately sends alarms so that law enforcement personnel can respond, question the people and handle the situation, and develop a contingency plan.

Neural network tracks treatment of brain tumors on MRI

Physicians and scientists in Germany have developed an artificial neural network that’s capable of interpreting brain MRI scans to tell neuroradiologists how brain tumors are responding to chemotherapy and radiation therapy, according to a study published in *The Lancet Oncology*.

https://www.aiin.healthcare/topics/diagnostic-imaging/ai-tracks-treatment-brain-tumors-mri
Be Bach in the first AI-powered Google Doodle

https://www.androidauthority.com/bach-google-doodle-967765/
Two rival AI approaches combine to let machines learn about the world like a child

Together, deep learning and symbolic reasoning create a program that learns in a remarkably humanlike way.

PHOTO FROM THE NEURO-SYMBOLIC CONCEPT LEARNER: INTERPRETING SCENES, WORDS, AND SENTENCES FROM NATURAL SUPERVISION; EDITED BY MIT TECHNOLOGY REVIEW

Machine learning is making pesto even more delicious
Researchers at MIT have used AI to improve the flavor of basil. It’s part of a trend that is seeing artificial intelligence revolutionize farming

https://www.technologyreview.com/s/613262/machine-learning-is-making-pesto-even-more-delicious/
Amazon Workers Are Listening to What You Tell Alexa
A global team reviews audio clips in an effort to help the voice-activated assistant respond to commands.

Common Echo owners questions

“Do you work for the NSA?”

“Alexa, is someone else listening to us?”

The jobs crunch
Self-driving cars, intelligent digital agents that can act for you, and robots are advancing rapidly. Will networked, automated, artificial intelligence (AI) applications and robotic devices have displaced more jobs than they have created by 2025?

52% - more jobs created than destroyed
48% - more jobs displaced than created

http://www.pewinternet.org/2014/08/06/future-of-jobs/
The literacy showdown between humans and AI: National Academies of Sciences, Engineering and Medicine and OECD

Level 3 question: Find a website that can be used to figure out how to place an international phone call.

Level 4: Find a book about genetically modified foods that asserts there are problems with arguments on both sides of the debate.

**PIAAC** = Programme for the International Assessment of Adult competencies, OECD test

**IALS** = International Adult Literacy Survey
AI in education – Holmes, Bialik, Fadel

**Areas where machines best humans**
- Repetitive/predictive tasks
- Tasks that hinge on computational power
- Classifying huge amounts of data and inputs
- Making decisions based on concrete rules

**Areas where humans best machines**
- Experiencing authentic emotions and building relationships
- Formulating questions and explanations across scales and sources
- Deciding how to use limited resources across dimensions strategically (including tasks machines should be doing and what data to give them)
- Making products and results usable for humans and communicating about them
- Making decisions according to abstract rules
Accenture: Look at the “missing middle”  
Human + Machine – Paul Daugherty, James Wilson

<table>
<thead>
<tr>
<th>Lead</th>
<th>Empathize</th>
<th>Create</th>
<th>Judge</th>
<th>Train</th>
<th>Explain</th>
<th>Sustain</th>
<th>Amplify</th>
<th>Interact</th>
<th>Embody</th>
<th>Transact</th>
<th>Iterate</th>
<th>Predict</th>
<th>Adapt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Humans</strong> complement machines</td>
<td><strong>AI gives humans superpowers</strong></td>
<td><strong>Human and machine hybrid activities</strong></td>
<td><strong>Machine-only activity</strong></td>
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Human-only activity
Automation, robots, artificial intelligence will even take over sophisticated tasks

45 years

2018 study (Oxford/Yale): The timeframe estimated by artificial intelligence experts when “high level machine intelligence” – unaided machines that can accomplish any given task *better and more cheaply than humans* – will be developed

2024: outperform language translators
2027: drive a truck
2031: work in retail
2049: write best selling book
2053: work as a surgeon
The need for re/training
Americans say robots will take over much of the work done by humans, but most workers don’t think it will affect their own type of work.

% saying within the next 30 years each of the following will ______ happen

- **Robots/computers will do**...
  - Much of the work done by humans: 2% Definitely not, 16% Probably not, 52% Probably, 30% Definitely
  - The type of work I do: 24% Definitely not, 38% Probably not, 25% Probably, 11% Definitely
Training is now seen as essential

... and most workers see continuous training as essential or important to career success

% saying training/skills development throughout their work life will be ...

- Essential: 54%
- Important, but not essential: 33%
- Not important: 12%

http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/
People think knowledge of computers, social dexterity, communications skills and access to training are key to success

<table>
<thead>
<tr>
<th>Trait</th>
<th>Extremely important</th>
<th>Very important</th>
<th>NET</th>
<th>Somewhat important</th>
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<tbody>
<tr>
<td>Having a detailed understanding of how to use computer technology</td>
<td>40</td>
<td>45</td>
<td>85%</td>
<td>12</td>
</tr>
<tr>
<td>Being able to work with people from many different backgrounds</td>
<td>35</td>
<td>49</td>
<td>85</td>
<td>12</td>
</tr>
<tr>
<td>Training in writing and communicating</td>
<td>37</td>
<td>48</td>
<td>85</td>
<td>13</td>
</tr>
<tr>
<td>Access to training to keep skills up to date</td>
<td>33</td>
<td>49</td>
<td>82</td>
<td>16</td>
</tr>
<tr>
<td>Training in math and science</td>
<td>22</td>
<td>47</td>
<td>69</td>
<td>26</td>
</tr>
<tr>
<td>Knowing a computer or programming language</td>
<td>23</td>
<td>41</td>
<td>64</td>
<td>26</td>
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<tr>
<td>Mastering social media</td>
<td>10</td>
<td>37</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Knowing a foreign language</td>
<td>10</td>
<td>25</td>
<td>36</td>
<td>43</td>
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http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/
Top expected outcomes: greater inequality, no new job explosion

Possible Negative Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No, not likely</th>
<th>Yes, likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inequality between rich and poor will be much worse than today</td>
<td>23%</td>
<td>76%</td>
</tr>
<tr>
<td>People will have a hard time finding things to do with their lives</td>
<td>36</td>
<td>64</td>
</tr>
</tbody>
</table>

Possible Positive Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No, not likely</th>
<th>Yes, likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy as a whole will be much more efficient</td>
<td>56</td>
<td>43</td>
</tr>
<tr>
<td>People can focus less on work and more on what really matters</td>
<td>57</td>
<td>42</td>
</tr>
<tr>
<td>Humans would find jobs more meaningful and appealing</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td>Economy will create many new, better-paying human jobs</td>
<td>75</td>
<td>25</td>
</tr>
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Americans think individuals and public schools should have the most responsibility to make sure workers have the right skills

% saying these groups should have ___ responsibility in making sure that the American workforce has the right skills and education to be successful in today's economy

- **Individuals themselves**: 72% a lot of, 22% some, 3% only a little, 1% none
- **Public K-12 education system**: 60% a lot of, 28% some, 7% only a little, 3% none
- **Colleges and universities**: 52% a lot of, 35% some, 7% only a little, 5% none
- **Employers**: 49% a lot of, 39% some, 8% only a little, 3% none
- **State governments**: 40% a lot of, 35% some, 15% only a little, 9% none
- **Federal government**: 35% a lot of, 34% some, 18% only a little, 11% none

[Link to Pew Research Center report](http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/)
Strong support for policies that limit impact of automation

- If machines were limited to doing dangerous or unhealthy jobs:
  - Strongly oppose: 3
  - Oppose: 11
  - Favor: 38
  - Strongly favor: 47

- If people could pay extra to interact with a human when buying something:
  - Strongly oppose: 13
  - Oppose: 24
  - Favor: 41
  - Strongly favor: 22

- If the govt offered all Americans a guaranteed income that would meet their basic needs:
  - Strongly oppose: 18
  - Oppose: 21
  - Favor: 30
  - Strongly favor: 31

- If the govt created a national service program that would pay people to perform tasks:
  - Strongly oppose: 12
  - Oppose: 29
  - Favor: 37
  - Strongly favor: 21

In the next 10 years, do you think we will see the emergence of new educational and training programs that can successfully train large numbers of workers in the skills they will need to perform the jobs of the future?

70% - “yes”
30% - “no”
Theme 1

The training ecosystem will evolve, with a mix of innovation in all education formats

- More learning systems will migrate online. Some will be self-directed and some offered or required by employers; others will be hybrid online/real-world classes. Workers will be expected to learn continuously

- Online courses will get a big boost from advances in augmented reality (AR), virtual reality (VR) and artificial intelligence (AI)

- Universities still have special roles to play in preparing people for life, but some are likely to diversify and differentiate
Theme 2

Learners must cultivate 21st-century skills, capabilities and attributes

- Tough-to-teach intangibles such as emotional intelligence, curiosity, creativity, adaptability, resilience and critical thinking will be most highly valued
- Practical, experiential learning via apprenticeships and mentoring will advance
Theme 3

New credentialing systems will arise as self-directed learning expands.

- While the traditional college degree will still hold sway in 2026, more employers may accept alternate credentialing systems as self-directed learning options and their measures evolve.
- The proof of competency may be in the real-world work portfolios.
The broader, more challenging environment for higher education
Colleges and universities have a positive/negative effect on the country, by party (2010-2017)

Among Rep/Lean Rep

POSITIVE

NEGATIVE

32% 35 37 58

53 54 58

36 10 11 12 13 14 15 16 17

Among Dem/Lean Dem

POSITIVE

NEGATIVE

65% 67 70 72

72

22% 19 22 22 18 19

18 19 10 11 12 13 14 15 16 17

Pew Research Center
Majority of adults say higher education system in the U.S. today is generally going in the wrong/right direction

Survey of U.S. adults conducted June 19-July 2, 2018

<table>
<thead>
<tr>
<th>All adults</th>
<th>Wrong direction</th>
<th>Right direction</th>
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<tbody>
<tr>
<td></td>
<td>61%</td>
<td>38%</td>
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<tr>
<th>Rep/Lean Rep</th>
<th>Wrong direction</th>
<th>Right direction</th>
</tr>
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<tbody>
<tr>
<td>73</td>
<td>26</td>
<td></td>
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<td>52</td>
<td>46</td>
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Major reasons for saying higher education is going in the wrong direction

- Tuition costs are too high: 84%
- Students are not getting the skills they need to succeed in the workplace: 65%
- Too much concern about protecting students from views they might find offensive: 54%
- Professors are bringing their political and social views into the classroom: 50%

Survey of U.S. adults conducted June 19-July 2, 2018
The main purpose of college should be...

<table>
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<tr>
<th></th>
<th>Personal and intellectual growth</th>
<th>Skills and knowledge for the workplace</th>
</tr>
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<td>All adults</td>
<td>35%</td>
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Survey of U.S. adults conducted May 25-June 29, 2016
Projected growth in college-going students 2012-2029
15% drop after 2025
Meet your new students in Generation Z
Gen Z is the most racially and ethnically diverse generation yet
(% of 6- to 21-year-olds who are nonwhite)

- Gen Z in 2018: 48%
- Millennials in 2002: 39%
- Gen Xers in 1986: 30%
- Early Boomers in 1968: 18%

Gen Z more likely to be pursuing college
(Among 18- to 21-year-olds who are no longer in high school, % enrolled in college)

- Gen Z in 2018: 59%
- Millennials in 2002: 53%
- Gen Xers in 1986: 44%
- Early Boomers in 1968: N/A

Gen Z more likely to have college-educated parents

(% of 6- to 17-year-olds living with a parent who has at least a bachelor’s degree)

- Gen Z in 2018: 43%
- Millennials in 2002: 32%
- Gen Xers in 1986: 23%
- Early Boomers in 1968: 16%

Gen Z and Millennials less conservative than older generations

Survey of U.S. teens and Sept. 24-Oct. 7, 2018 and Sept. 17-Nov. 25, 2018
The fate of humans
63% - hopeful people will be better off
37% - believe people will not be better off

By 2030, do you think it is most likely that advancing AI and related technology systems will enhance human capacities and empower them? That is, most of the time, will most people be better off than they are today? Or is it most likely that advancing AI and related technology systems will lessen human autonomy and agency to such an extent that most people will not be better off than the way things are today?”

1) Human agency

Decision-making on key aspects of digital life is automatically ceded to code-driven, “black box” tools. People lack input and do not learn the context about how the tools work. They sacrifice independence, privacy and power over choice; they have no control over these processes. This effect will deepen as automated systems become more prevalent and complex.
2) Data abuse

Most AI tools are and will be in the hands of companies striving for profits or governments striving for power. Values and ethics are often not baked into the digital systems making people’s decisions for them. These systems are globally networked and not easy to regulate or rein in.
3) Dependence lock-in

Many see AI as augmenting human capacities but some predict the opposite – that people’s deepening dependence on machine-driven networks will erode their abilities to think for themselves, take action independent of automated systems and interact effectively with others.
4) Mayhem

Some predict further erosion of traditional sociopolitical structures and the possibility of great loss of lives due to accelerated growth of autonomous military applications and the use of weaponized information, lies and propaganda to dangerously destabilize human groups. Some also fear cybercriminals’ reach into economic systems.
Many have little or no confidence in political wisdom of the American people

% saying they have ___ of trust and confidence in the wisdom of American people in making political decisions

Source: Survey of U.S. adults conducted March 7-14, 2018.
### Country viewed as falling short on a range of widely supported democratic values

% who say each is very important for the U.S. and describes the country very/somewhat well ...

<table>
<thead>
<tr>
<th>Issue</th>
<th>NET Very/Somewhat well</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reps and Dems work together on issues</td>
<td>19</td>
<td>78</td>
</tr>
<tr>
<td>Elected officials face serious consequences for misconduct</td>
<td>30</td>
<td>83</td>
</tr>
<tr>
<td>Campaign contributions do not lead to greater political influence</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Govt. is open and transparent</td>
<td>30</td>
<td>74</td>
</tr>
<tr>
<td>News organizations do not favor a party</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Judges are not influenced by political parties</td>
<td>43</td>
<td>82</td>
</tr>
<tr>
<td>Rights and freedoms of all people are respected</td>
<td>47</td>
<td>84</td>
</tr>
<tr>
<td>Tone of political debate is respectful</td>
<td>25</td>
<td>61</td>
</tr>
<tr>
<td>Statement</td>
<td>NET Very/Somewhat well</td>
<td>Very important</td>
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<tr>
<td>---------------------------------------------------------------------------</td>
<td>------------------------</td>
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</tr>
<tr>
<td>News organizations are independent of government</td>
<td>43</td>
<td>76</td>
</tr>
<tr>
<td>Everyone has an equal opportunity to succeed</td>
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<td>82</td>
</tr>
<tr>
<td>People agree on basic facts even if disagree on politics</td>
<td>34</td>
<td>60</td>
</tr>
<tr>
<td>Govt. policies reflect views of most Americans</td>
<td>36</td>
<td>59</td>
</tr>
<tr>
<td>Views of those not in the majority on issues are respected</td>
<td>40</td>
<td>62</td>
</tr>
<tr>
<td>Balance of power between govt. branches</td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>People are free to peacefully protest</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Military leadership does not publicly support a party</td>
<td>66</td>
<td>74</td>
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</table>
Public is broadly pessimistic about the future of America

% saying...

When the public looks to the future of the U.S. over the next 30 years, they see...

A country declining in stature on the world stage

The U.S. will be LESS important in the world 60%

The U.S. will be MORE important in the world 31%

A widening gap between the haves and the have-nots

Gap between rich and poor will GROW 73

Gap between rich and poor will GET SMALLER 19

Growing political polarization

Country will be MORE politically divided 65

Country will be LESS politically divided 26

And they are worried that the country’s political leaders are not up to the challenge

NOT AT ALL worried: 2%

NOT TOO worried: 10%

FAIRLY worried: 39%

VERY worried about the ability of political leaders to solve the country’s biggest problems: 48%

https://www.pewsocialtrends.org/2019/03/21/public-sees-an-america-in-decline-on-many-fronts/
Thank you!

Email: Irainie@pewresearch.org

Twitter: @Irainie
@pewinternet
@pewresearch
UC Responders

Dr. Julia Heath

Executive Director of UC Economics Center, Alpaugh Professor of Economics, and nationally recognized leader in the field of economic education

Dr. Richard Harknett

Professor of Political Science and Head of Department, Affiliated Faculty with Department of Information Technology – internationally recognized expert on international security and cybersecurity

Terry Grundy

Adjunct Associate Professor in the School of Planning and Course Director for UC Honors seminars in ethics and intellectual and cultural history
1819 72% of US Labor Force

2019 US World’s largest Economy

1819 US 2% of world economy

2019 less than 2%
This?
Or This?
Critical Path

Significant Levels of Net Job Destruction?

- No
  - Income Problem Unsolved
    - Social Unrest
      - Problem of Identity
  - Problem of Community
- Yes
  - Income Problem Solved
    - Personal Dislocation
    - Problem of Leisure v. Idleness

Terry Grundy
## Curricular Content *

<table>
<thead>
<tr>
<th>Problem</th>
<th>Course Content</th>
<th>U.C. Contributors</th>
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</thead>
<tbody>
<tr>
<td>Forming Identity</td>
<td>- Ethnic/Cultural Studies</td>
<td>- Arts &amp; Sciences</td>
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<tr>
<td></td>
<td>- Developmental Psychology</td>
<td>- CCM (Media/Acting)</td>
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<tr>
<td></td>
<td>- Media Studies</td>
<td>- DAAP (Arch)</td>
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<tr>
<td></td>
<td>- “Mindfulness” Meditation</td>
<td>- College of Medicine</td>
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<tr>
<td></td>
<td></td>
<td>- College of Nursing</td>
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<tr>
<td>Building Community</td>
<td>- Ethics/Moral Philosophy</td>
<td>- Arts &amp; Sciences</td>
</tr>
<tr>
<td></td>
<td>- Sociology of Groups/Social Organizations</td>
<td>- CECH</td>
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<td></td>
<td>- Applied Psychodynamics</td>
<td>- LCB</td>
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<td></td>
<td>- Community Organizing</td>
<td>- DAAP (SOP)</td>
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<td></td>
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<td>- CAHS</td>
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<tr>
<td>Cultivating Leisure/Avoiding Idleness</td>
<td>- Music/Art Practice</td>
<td>- CCM</td>
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<tr>
<td></td>
<td>- Humanities (Philosophy Literature, History)</td>
<td>- DAAP (Art)</td>
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<td></td>
<td>- Service Learning</td>
<td>- Arts &amp; Sciences</td>
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<td>- ELCE</td>
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* Examples only
UC Talks

Host:

Udo Greinacher, Niehoff Professor for Film and Media Studies, DAAP School of Architecture & Interior Design

Presenters:

Aaron Bradley, Donna Chrobot-Mason, et al, Jessica Furgerson, Michael Jones, and Zvi Biener
COLLABORATIVE, ADAPTABLE, AND CROSSING “MAJOR” BOUNDARIES: THE NEW PARADIGM OF CAREER EDUCATION
UNIVERSITY EVOLUTION
“...automation will displace between 400 and 800 million jobs by 2030, requiring as many as 375 million people to switch job categories entirely.”

Midpoint estimate = 75 million workers could need to change occupational category by 2030.

-McKinsey Global Institute
8% to 9% percent of 2030 labor demand will be in new types of occupations that have not existed before.

45% percent of work activities could be automated using already demonstrated technology.

-McKinsey Global Institute
“In other words, automation is likely to change the vast majority of occupations—at least to some degree—which will necessitate significant job redefinition and a transformation of business processes.”

-McKinsey Global Institute
OUR RESPONSE

Intentionally disrupt the current paradigm of siloed, discipline-based experiences and the premise of professional degrees as pipelines to specific careers.
Top Skills Graduates Need:
Creativity
Creative Problem Solving
Critical Thinking
Collaboration

-U.S. Department of Education, Bloomberg, the World Economic Forum, and PayScale
“In countries around the world, economies run on creativity, innovation, and collaboration. Skilled jobs are more and more centered on solving unstructured problems and effectively analyzing information.”

- World Economic Forum
OUR RESPONSE

Sharpen students’ critical thinking + problem solving skills through practical applications; invite industry collaboration and co-creation opportunities for all students.
CAREER EDUCATION 2.0:
Leveraging signature strengths to develop **resilient, adaptable, problem-solvers** who **embrace ambiguity** with curiosity and confidence.
PARTNERED SHELL COURSES

SLO’s dedicated to creative problem-solving, adaptability, and innovation approaches NOT specific to a discipline or major

Project-based activities + assignments, quickly adaptable to various industry partners

Cross disciplinary and cross-listed, or department specific
CASE STUDY

INQUIRY TO INNOVATION: THE FUTURE OF WORK

Transdisciplinary seminar course; Co-op 2.0 pilot

Collaboration with local architecture and design research firm BHDP

Co-create predictive insights about the future of work from the perspective of undergraduate students (the future workforce)
GEN ED REQUIREMENTS

Introduce Gen Ed requirements of transdisciplinary, industry-partnered seminars throughout students’ educational career

Industry partnered experiences with practical resume, portfolio, and skills-development applications
THEMATIC TRACKS

Nimble, thematic degree tracks that cross disciplines (even colleges + schools)

Collection of courses, project-based experiences, extra-curriculars, and external engagements that can adapt in real-time
OUR RESPONSE TO THE FUTURE OF (NO) WORK?

Cross-disciplinary engagement and exploration
Fluid, agile collaboration with industry partners
Real-time integration of theory and practice
Students as collaborators and co-creators

Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages; McKinsey Global Institute (2017)

Cultivating Digital Literacy; Adobe Report (2016)


Preparing Future Leaders with the help of Artificial Intelligence

Dr. Donna Chrobot-Mason
Kristen Campbell
Riley Mayr
Jack Fitzgerald
AI will not replace, but will change, the role of leaders in organizations.
Traditional Approach to Leadership Education

- Learn
- Innovate
- Reflect
- Create
- Connect
- Speak Up
From Heroic Individual

To Collective Leadership
Changes in leadership

• Complex problems
• Collaborative problem-solving
• Managing paradox
• Leadership as a process, not a person
• Leadership anywhere, anytime, from anyone
• Relational property rather than individual ability
TRUE LEADERS DON'T CREATE FOLLOWERS, THEY CREATE MORE LEADERS
Future Approach to Leadership Education

DECISION TREE FOR BENEFITS-BASED PARTITIONED PRICING
There are six decision points that can help managers decide whether to partition or separate charges, or combine prices across components. Every case is different, even for similar products offered by the same company.

1. Is the consumer committed to making the purchase from you?
   - Yes
   - No

2. Do competitors partition prices?
   - Yes
   - No

3. Is the price of the component small relative to the base price?
   - Yes
   - No

4. Do consumers react negatively to the partitioned component?
   - Yes
   - No

5. Does your company control the costs/quality/delivery of component?
   - Yes
   - No

6. Does partitioned component satisfy a customer goal?
   - Yes
   - No

Combine
- Combine price components (default).

Partition
- Benefits-based partition pricing may be more attractive to consumers because it highlights high-benefit components related to the consumer's goals.

Partitioning leads to lower price perceptions and may increase purchase likelihood.
Feedback Scenario

You are the Director of a small HR department for a manufacturing firm (you manufacture plastic parts for automobiles). You supervise four people and are going to provide feedback to your lowest performer:

- 6 months tenure
- Manages training and development
- Appears disorganized and missed major deadline
- Company-wide safety training program - training materials were not ready as scheduled
Case Study: Floating Holidays

- Company Policy
  - closed on Good Friday
- Jewish employee, Rachel, comes to your office to talk to you
- Change Good Friday from a paid holiday to a floating holiday
- Company gives employees 10 days off a year for holidays, three of which are Christian celebrations
Leadership Adventures using AI

- White Box Decision Tree
- “Choose your own Adventure” Book
- Driven by database of knowledge provided by experts (leaders)
- Use existing cases to create novel cases
- Use AI as a tool to enhance student learning by creating richer more realistic scenarios
- Completely new scenario each time
- Powerful Debrief !!
"Major" Decision

- AI-Resistant
- AI-Susceptible
- AI-Fragile
- AI-Resilient

Education Administration

- Aviation
- Accounting

Michael Jones
SKILL &
HUMAN
IDENTITY
SOME BAD NEWS,
SOME GOOD
FIRST, THE BAD NEWS (& THE BIG PICTURE)
1. AI IS ALREADY SMARTER THAN US

2. IT WILL CHANGE WHAT IT MEANS TO BE HUMAN
1. AI is already smarter than us
2. It will change what it means to be human

Educational strategies
Is it CANCER?

Stand-Alone Artificial Intelligence for Breast Cancer Detection in Mammography: Comparison With 101 Radiologists. *JNCI: Journal of the National Cancer Institute*, 2019
AI will meet goals at superhuman levels.
1. AI IS ALREADY SMARTER THAN US (AS A SPECIES!)

2. IT WILL CHANGE WHAT IT MEANS TO BE HUMAN
Our identity as "human" is unique, superlative & self-sufficient traits.
Other examples: abstract symbolic thinking, self-analysis, freewill, geocentrism, evolution, etc.
NO ABILITY WILL BE

UNIQUE TO US

NONE WILL BE
OUR IDENTITY AS "HUMAN"

UNIQUE, SUPERLATIVE & SELF-SUFFICIENT TRAITS?

OUR IDENTITY AS "HUMAN"
THE QUESTION OF EDUCATION RUNS DEEP.
HOW DO WE PREPARE FOR A FUTURE WHERE:
EVERY ABILITY IS REPLACED
THE GOOD NEWS

(HOW TO TEACH FOR THE FUTURE)
1. TRANSCEND FIRST-ORDER SKILLS
FIRST ORDER SKILLS:

PROGRAMMING, DIAGNOSING DEPRESSION, MODELLING PROTEIN FOLDING, ANALYZING MARKETING DATA, DESIGNING MACHINERY, OR ANY PROBLEM-SOLVING WHERE THE SOLUTION
MOST PROBLEM-SOLVING IS LIKE THIS!
NOT PROBLEM-SOLVING

BUT PROBLEM-ARTICULATION

by teaching how to recognize misalignments in values, information, precedents, & prospects
2. HELP STUDENTS COPE WITH THE TRANSITION TO A NEW “HUMANITY”
DISABILITY STUDIES IS ALREADY WORKING ON THIS BY

ABILITY

IDENTITY

ASSISTIVE TECHNOLOGIES
DSM-V:

... disability involves impairments... [in] how well an individual copes with everyday tasks:
  • [Includes] skills in language, reading, writing, ... knowledge, and memory.
  • self-management in areas such as personal care..., money management... and organizing
What do you use for everyday tasks?

Spellcheck
iPhone/Android
Outlook
Calendar
GPS
Text-search

Braille Reader
Voice Generator
Wheelchair Prostheses
WHAT HAPPENS WHEN EVERY ABILITY IS DELEGATED TO MACHINES?
(WHEN WE ARE PERMANENTLY AND INEXTRICABLY RELIANT ON ASSISTIVE TECHNOLOGY)
WHAT HAPPENS WHEN EVERY ABILITY IS DELEGATED TO MACHINES? (WHEN WE ARE PERMANENTLY AND INEXTRICABLY RELIANT ON ASSISTIVE TECHNOLOGY)
WHAT HAPPENS WHEN EVERY ABILITY IS DELEGATED TO MACHINES?
(WHEN WE ARE PERMANENTLY AND INEXTRICABLY RELIANT!)
DISABILITY STUDIES SHOULD BE A CORNERSTONE OF THE CURRICULUM
Thank you

Image Sources

- http://YA-webdesign
- https://kids.nationalgeographic.com/animals/orca/
- https://en.wikipedia.org/wiki/Prairie_dog
VOTING COMING UP!!
Please complete and turn in your ballot for one of the winners of the *UC Talks* competition! Enjoy coffee and a bite while ballots are being counted.

Sign-up for one of the CET&L reading groups on AI
Rising to the Challenge
Provost Kristi Nelson

Kristi Nelson, PhD, is Executive Vice President for Academic Affairs and Provost of the University. She has served UC in many roles, including as Interim Dean of the College of Arts & Sciences, Senior Vice Provost, and Associate Dean for Academic Affairs in the College of DAAP.
Thank you for attending

Please join your colleagues for “happy hour” at Taste of Belgium, just a few steps across and up the street!