

Welcome!

**Summit on Accessible and Equitable Learning in
a Quasi-Post-Pandemic World 2022**



Introductory Remarks from Dr. Yakut Gazi (Co-PI)

Vice Provost for Learning Innovation and Digital
Education, Duke University

**Summit on Accessible and Equitable Learning in
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Thank You to Our Supporters and Contributors

- Each and every one of our presenters and panelists
- Our keynote speaker - Sheryl Burgstahler (University of Washington)
- The Co-PI's, sponsors, and program team who brought the conference to life:
 - Microsoft - Danie Remmick, Elizabeth Bruce, and team + all Microsoft University Partners
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 - OIT - Warren Goetzel (Co-PI), Simeon Payne, James Logan, Robin Dedecker
 - Georgia Tech Professional Education - Aiesha Dawda and Alvin Dickson
 - Barnes & Noble at Georgia Tech - Peter Nguyen, Reshma Patel, and Dianna Billings
 - Georgia Tech Research - Rob Kadel
 - AI-ALOE - Chaohua Ou (Co-PI)
 - Duke University - Yakut Gazi (Co-PI)
 - Thrive Scholars - Matt Lisle (Co-PI)
 - LATN Language Solutions
 - Office of Corporate Engagement - Caroline Wood

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Keynote Address from Dr. Sheryl Burgstahler

Director of UW Accessible Technology and DO-IT, UW-IT

Affiliate Professor of Education, University of Washington

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Accessible Online Course Design

How digital technology can support equity & inclusion

Sheryl Burgstahler, Ph. D.
University of Washington

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2 Units in Accessible Technology Services

- IT Accessibility Team
 - 1984–
 - Funded by UW
- DO-IT Center
 - USA, 1992–
 - Supported with federal, state, corporate, private funds
 - DO-IT Japan, 2007–
 - Center on UD in Education, 1999–



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Basic approaches

- When we are working with students, we promote
SELF DETERMINATION
- When we are working with faculty, staff, institutions,
technology companies, we promote
UNIVERSAL DESIGN (UD)

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Today's topics

- History, legal basis for accessibility
- Accommodations-only & universal design (UD) approaches in providing access to students with disabilities
- Principles & examples of practices for creating inclusive online courses & leading DEI initiatives
- Resources, Q&As

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One-minute history of the evolution of responses to human differences:

- Eliminate, exclude, segregate
- Cure, rehabilitate, accommodate
- Universally design + accommodate



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GT
Georgia
Tech.

Legal basis for access

- Section 504 of the Rehabilitation Act of 1973
- The Americans with Disabilities Act of 1990 & its 2008 Amendments



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 Georgia
Tech.

Consider ability on a continuum

- understand English, social norms
- see
- hear
- walk
- read print
- communicate verbally
- tune out distraction
- learn, ...





Note

- Most disabilities are “invisible”
- Fewer than 1/3 of students with disabilities report them to the disability services office
- Disability services offers accommodations

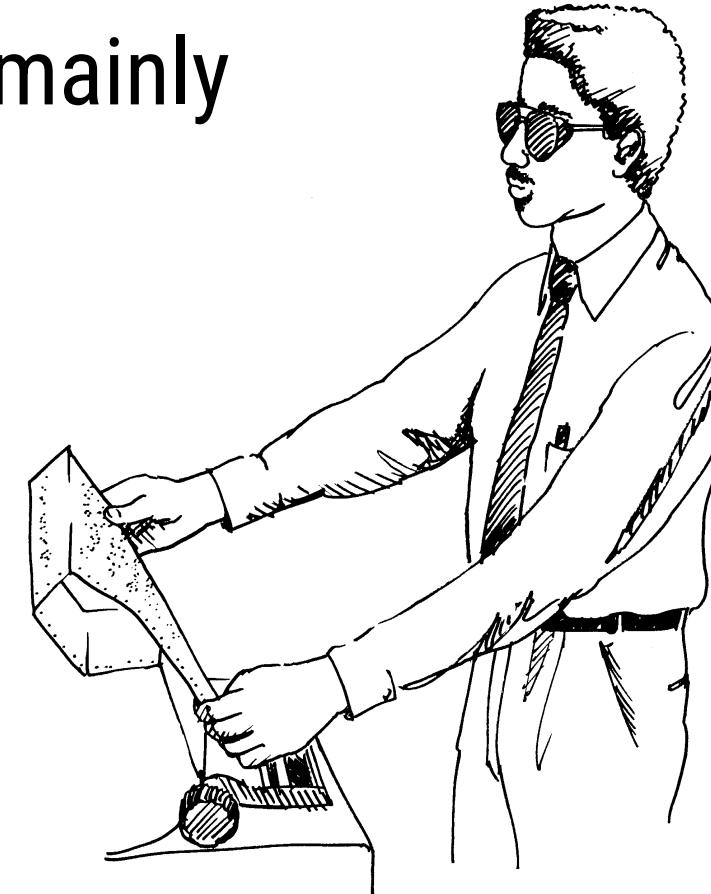


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Common/expensive accommodations for online courses

- Making inaccessible documents accessible, mainly those in PDF format
- Captioning videos



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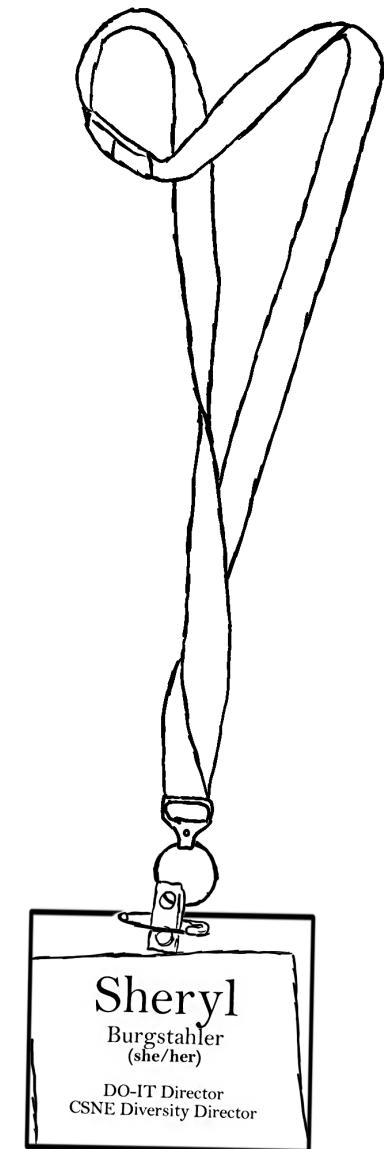


Universal Design (UD) =

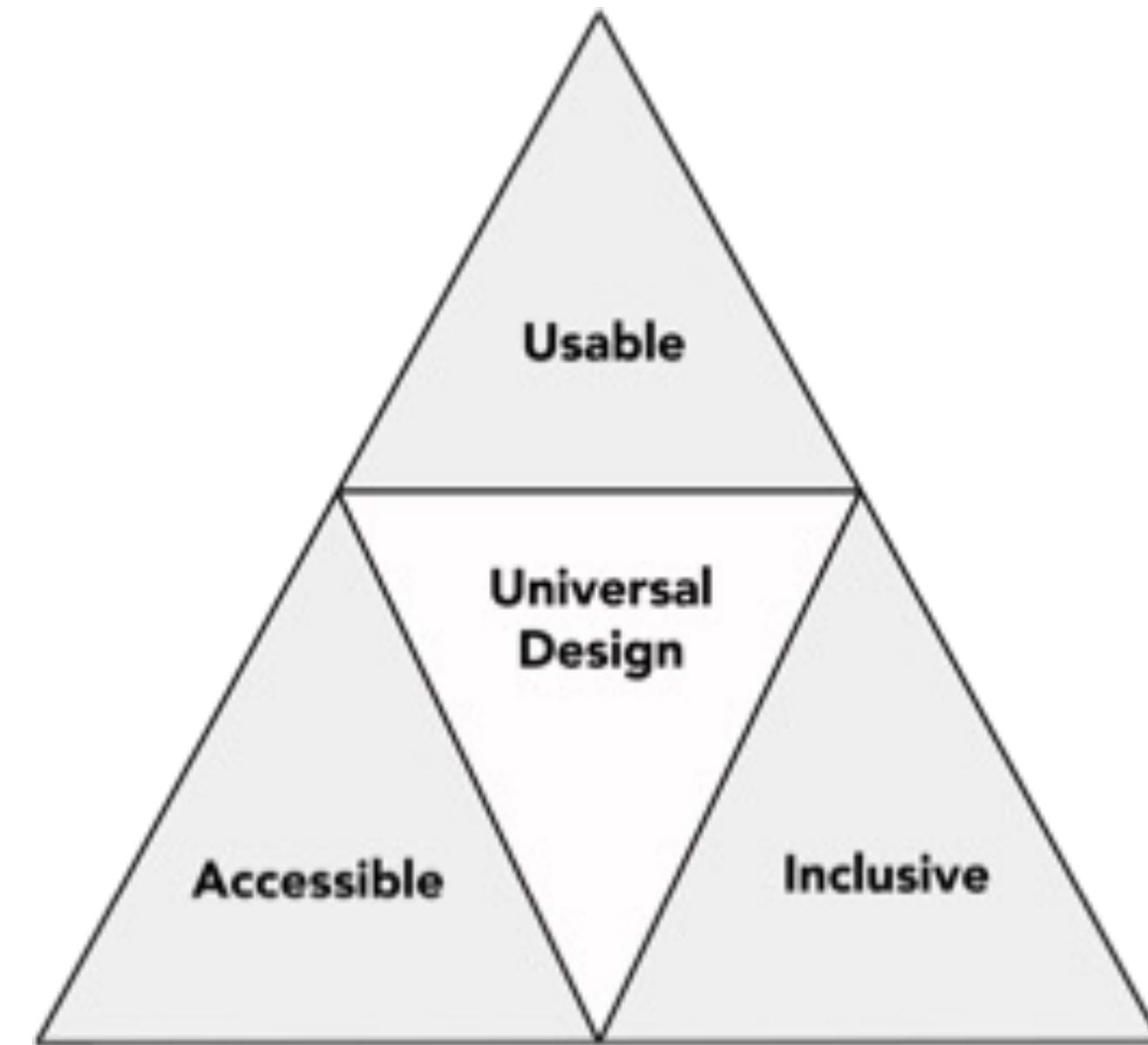
“the design of products & environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”

The Center for Universal Design
www.design.ncsu.edu/cud

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Applying UD makes materials & activities...



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“When you plant lettuce,

- if it does not grow well, you don't blame the lettuce.
You look for reasons it is not doing well.
- It may need fertilizer,
or more water,
or less sun..."
- -Thích Nhất Hạnh,
Vietnamese Buddhist Monk



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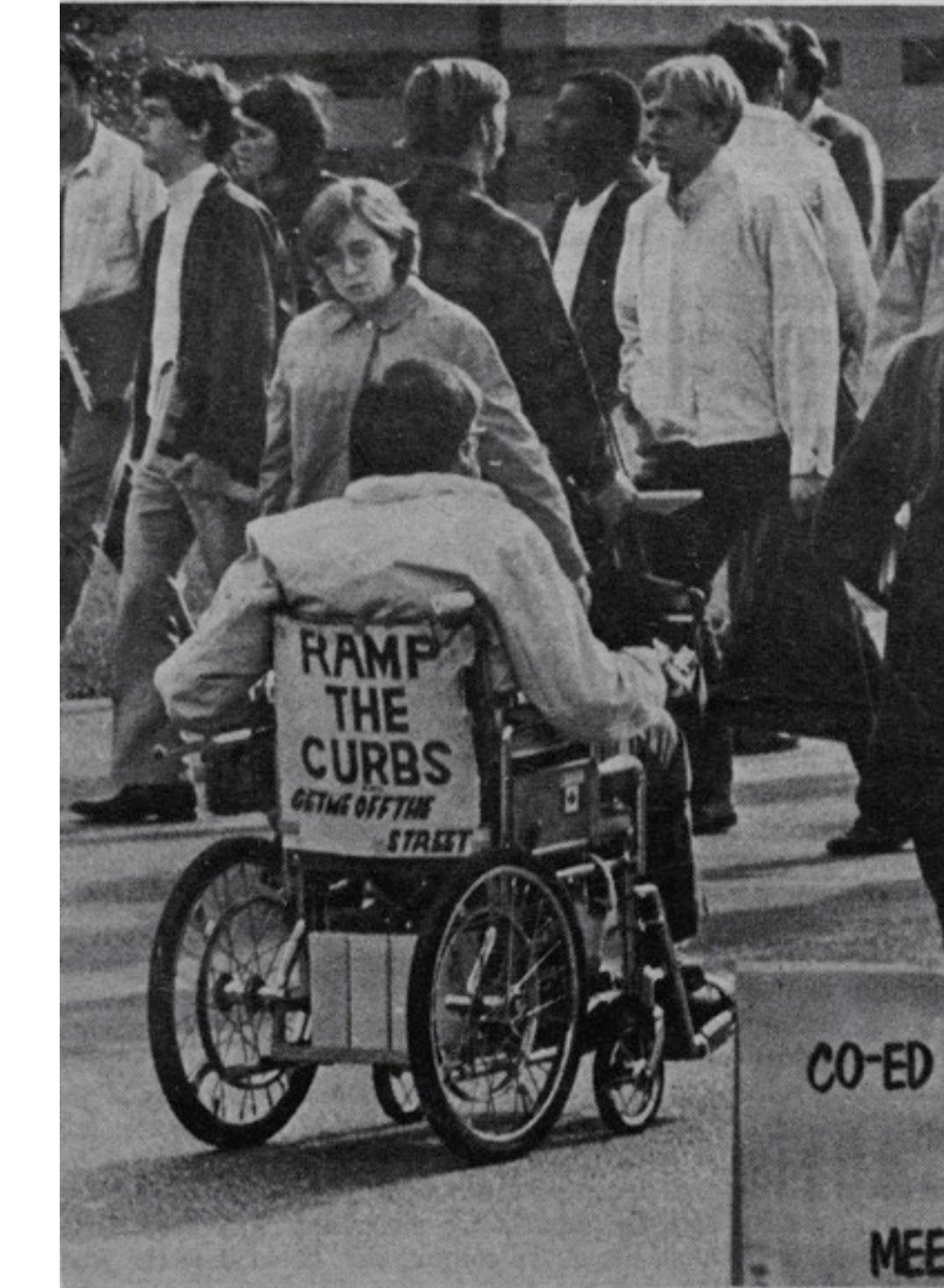
UD of physical spaces

“The Daily”
UW

1970

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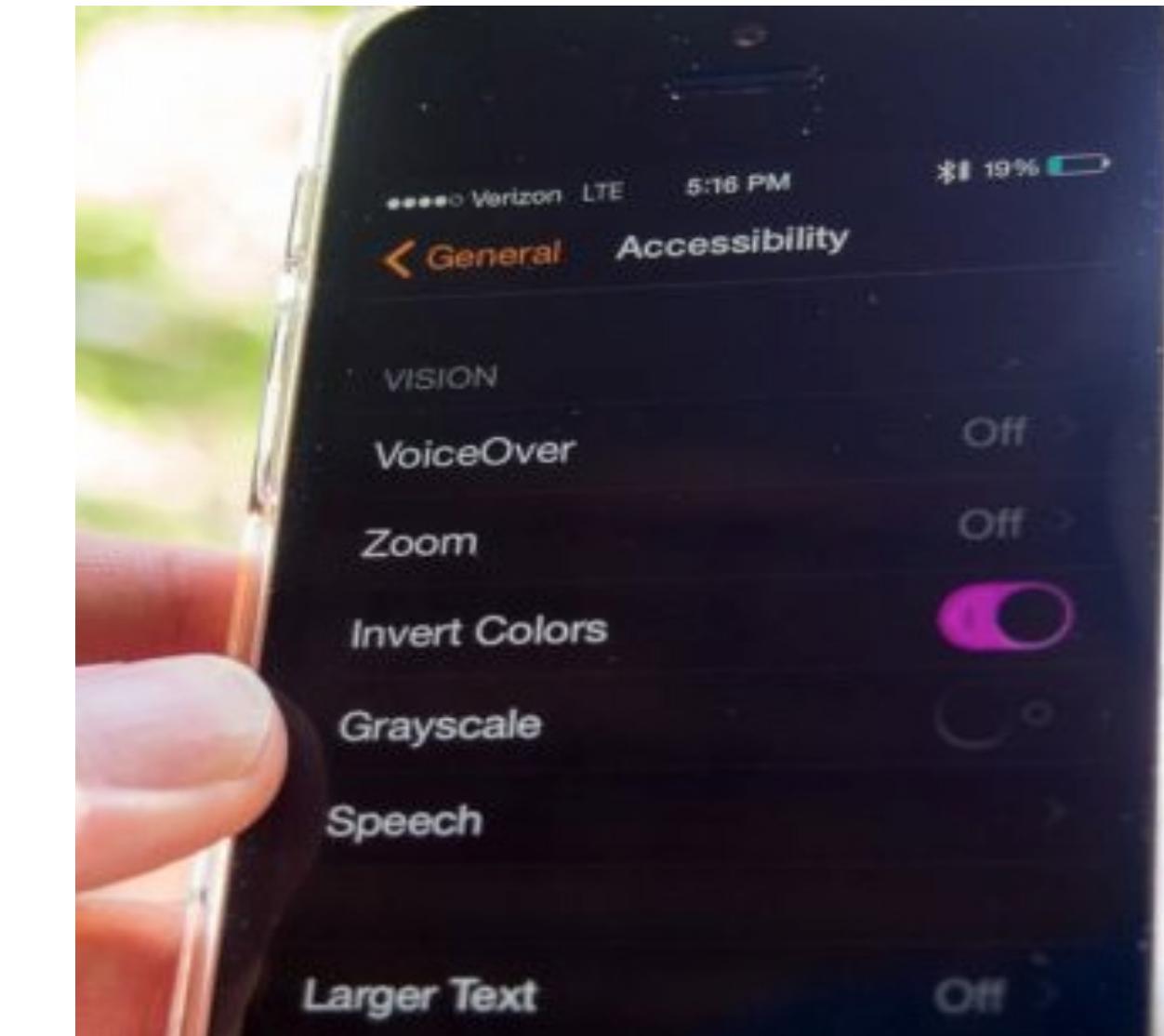
Ramp The Curbs



Forging a stream of humanity, this silent protester carries his campaign on his back. His goal: to end high-rise sidewalks.
(photo by grant haller)

UD of technology

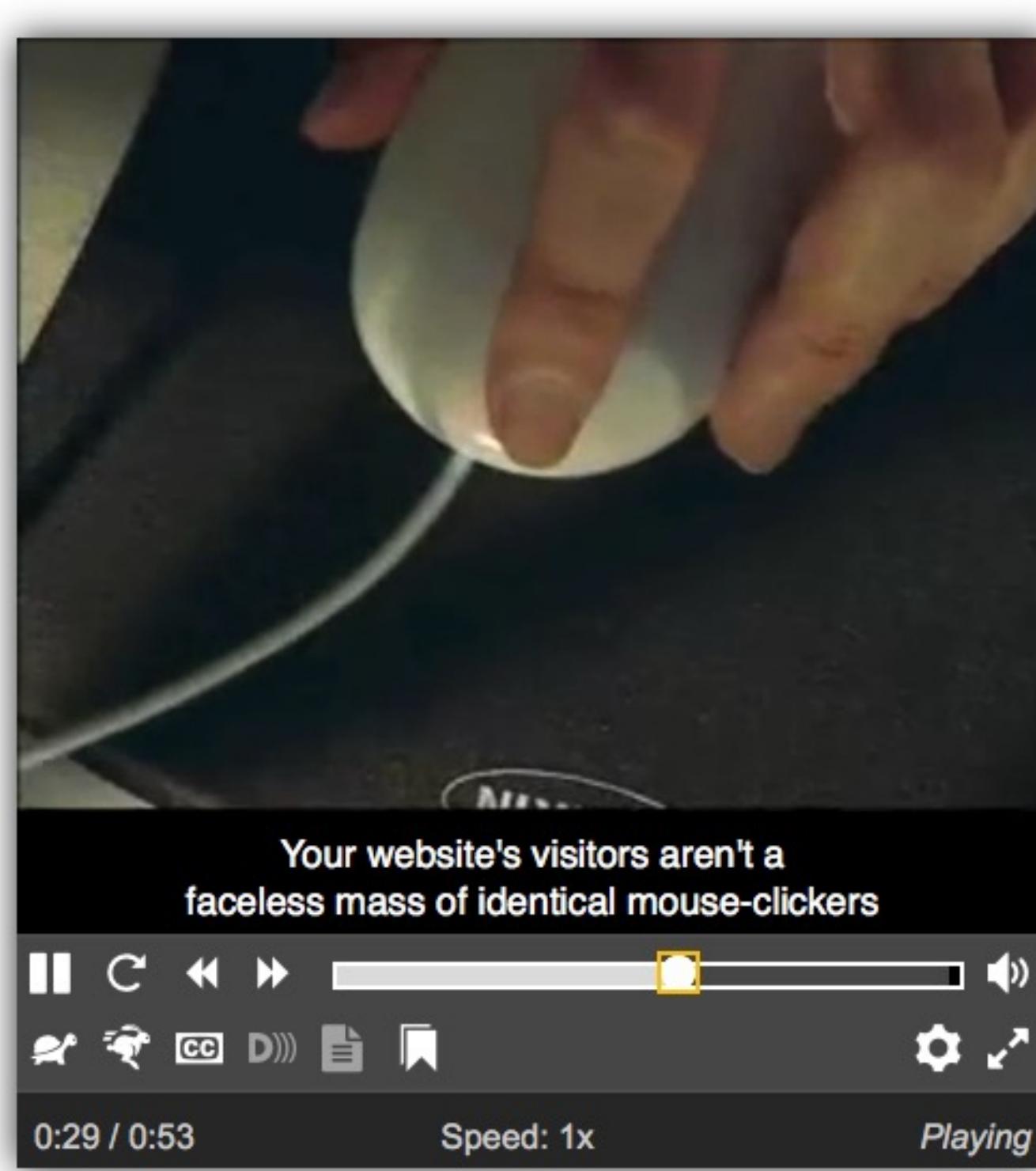
- builds in accessibility features



- ensures compatibility with assistive technology

Beneficiaries of captions on videos...

People who:



- are unable to hear the audio
- are English learners
- are in a noisy or noiseless location
- have slow Internet connections
- want to know the spelling of words
- need to find content quickly

Instructors should consider characteristics of students who *might* be in their courses & the assistive technologies (AT) they *might* be using as they develop a course.

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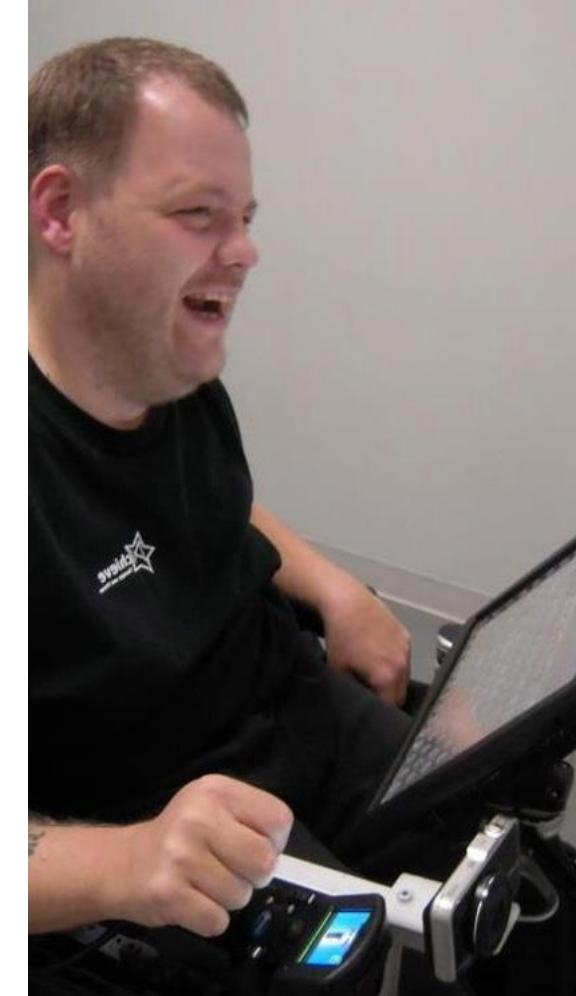


Consider people with a range in English language skills, cultures, interests, abilities, technology used

Zayn



Anthony



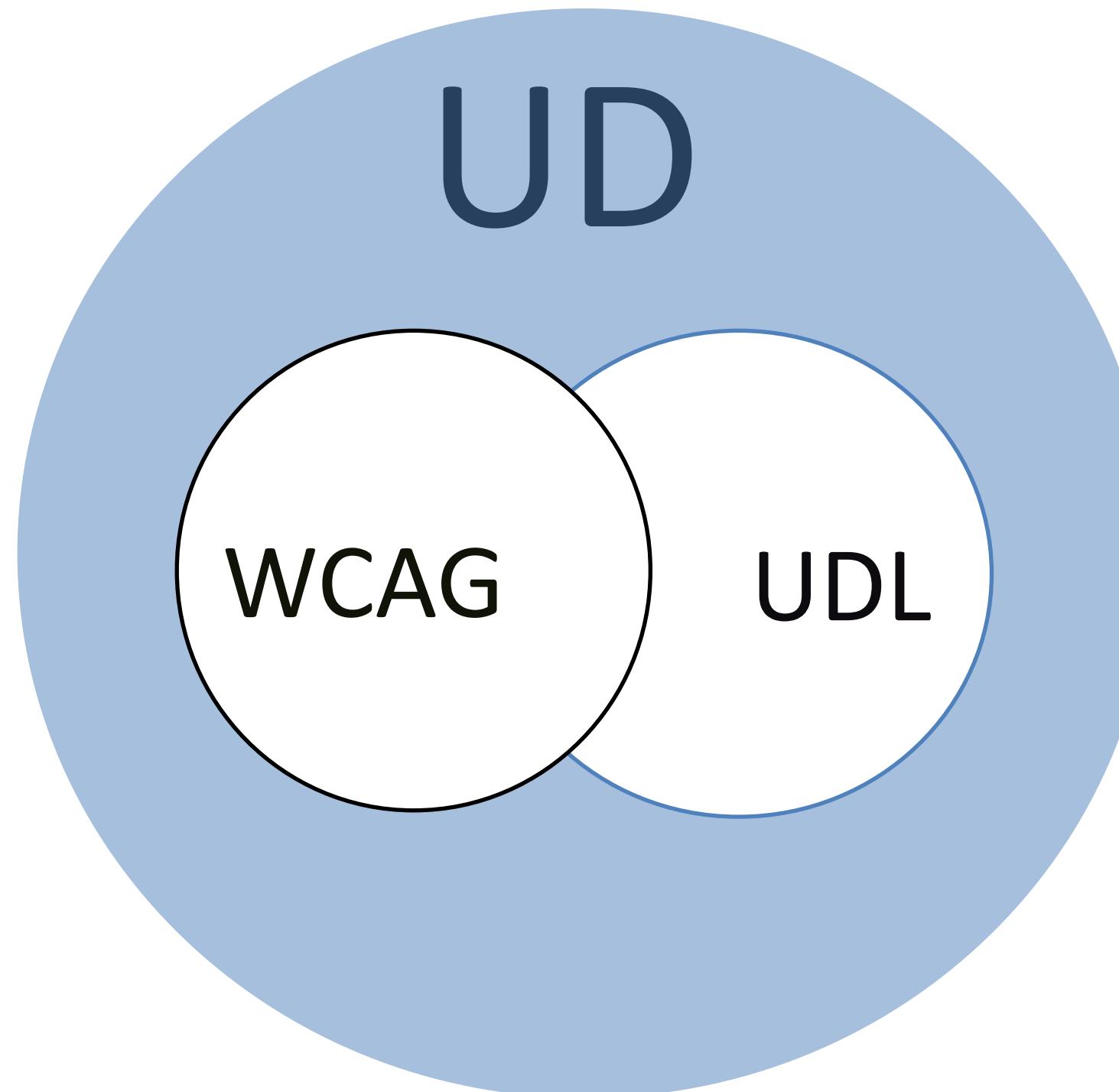
Jesse



Hadi



3 sets of principles & guidelines underpin UD for higher education (UDHE)



- 7 Universal Design
- 3 Universal Design for Learning
- 4 Web Content Accessibility Guidelines

In a nutshell,

1. Provide multiple ways for participants to learn & to demonstrate what they have learned, & to engage.
2. Ensure that all technologies, facilities, services, resources, & strategies are accessible to individuals with a wide variety of abilities & other characteristics.

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By Sheryl Burgstahler, Ph.D.

I taught the first online learning course at the University of Washington in 1995. My co-instructor was Dr. Norm Coombs, who was, at the time, a professor at the Rochester Institute of Technology. We designed the course to be accessible to anyone, including students who were blind, deaf, or had physical disabilities.



- To help instructors get started
- With how-to references
- Developed from research & reports from online instructors & students

Examples from 20 Tips, 1/3

- Content presented in multiple ways
- Multiple ways to communicate
- Multiple ways to demonstrate learning
- Videos captioned; audio transcribed
- Clear instructions; consistent layouts & organization
- PDFs avoided; no scanned image PDFs

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Examples from 20 Tips, 2/3

- Text format, structured headings, lists, tables; descriptive text for hyperlinks, content in images
- Large, bold, sans serif fonts; uncluttered pages; plain backgrounds; high contrast color combinations, with no reliance on color alone
- Use plain English, spell/define acronyms

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Examples from 20 Tips, 3/3

- Examples, assignments relevant to diverse audience
- Outlines, other scaffolding tools provided
- Adequate time provided for activities, projects, tests
- Feedback on parts & corrective opportunities provided

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+

1. Use accessibility checkers in Microsoft Word & PowerPoint, Learning Management Systems, & other products
2. When choosing technology to use:
 - Check for accessibility page on website
 - Check for VPAT
 - Post question on ATHEN discussion list
 - Check operable with keyboard alone, ...

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For specifics, check out uw.edu/doit/knowledge-base. E.g., STEM content Q&As:

- How to blind people operate computers?
- How can I create math & science documents that are accessible to students with visual impairments?

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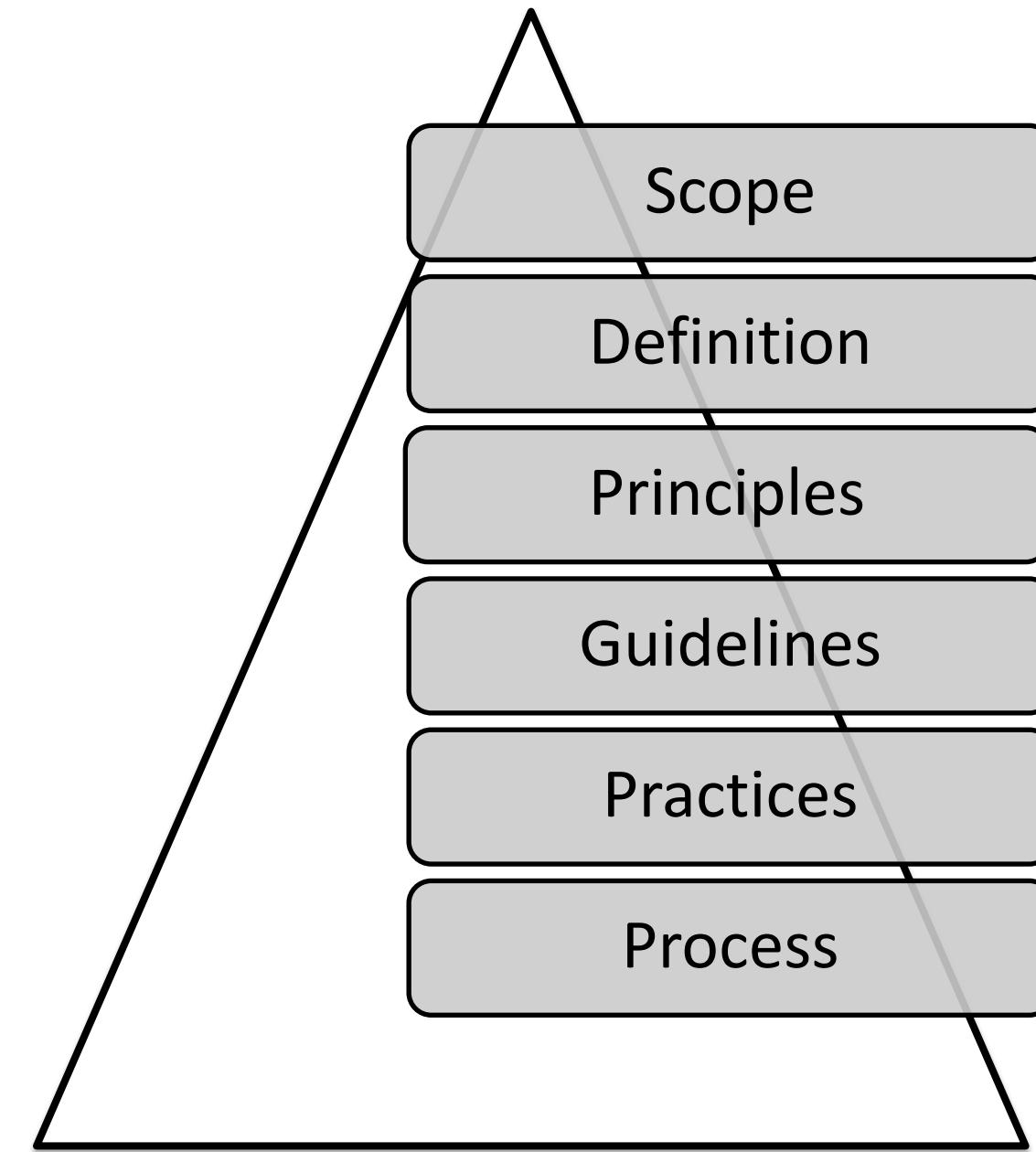
An attitude; a framework, goal, process—UD:

- Values diversity, equity, & inclusion
- Promotes best practices & does not lower standards
- Is proactive & can be implemented incrementally
- Benefits everyone
- Minimizes the need for accommodations

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A UDHE Framework

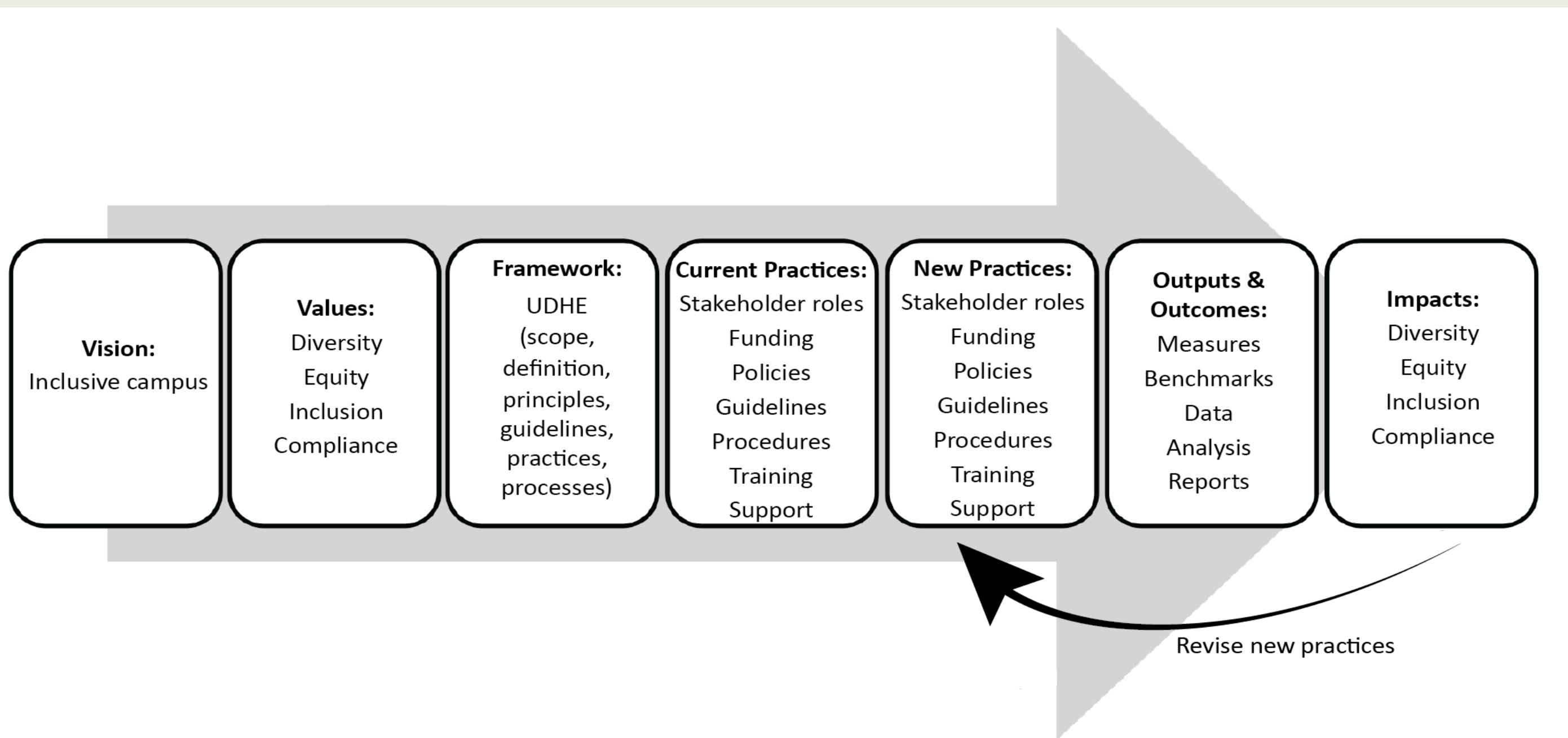


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Example: DEI Initiative in HE

underpinned by UDHE Framework



Apply the Model to accessible IT

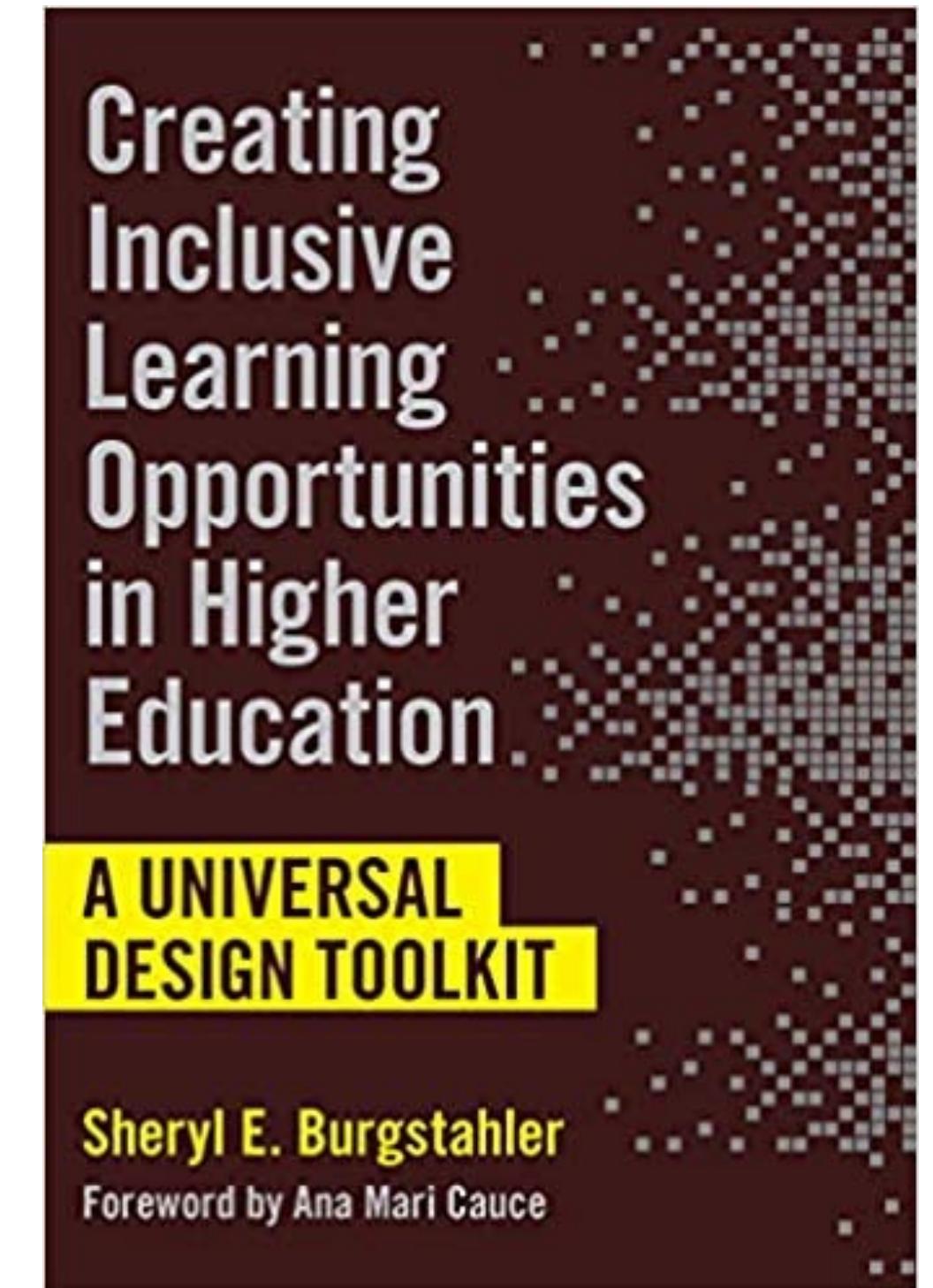
- Vision: IT procured, developed, used is accessible
- Values: Diversity, equity, inclusion, compliance
- Framework: UDHE's scope, definition, principles, guidelines, practices, processes
- Current & new practices: Stakeholder roles, funding, policies, guidelines, procedures, training, support
- Outputs & outcomes: Measures, benchmarks, data, analysis, reports
- Impacts: Increased alignment with vision & values

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Resources

- UW's *Accessible Technology*
uw.edu/accessibility
- *DO-IT* uw.edu/doit
 - *Knowledge Base*
 - *Center for Universal Design in Education* uw.edu/doit/cude
 - A book...
 - *20 Tips for Teaching an Accessible Online Course checklist, tutorial*
- Sheryl Burgstahler sherylb@uw.edu



Q&A with Dr. Sheryl Burgstahler

- Moderator: **Chaoqua Ou (Co-PI)**, Project Manager, National AI Research Institute for Adult Learning and Online Education (AI-ALOE), Georgia Tech

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Microsoft University Partners Presentations

- **Danie Remmick** - Senior Accessibility Program Manager, Microsoft
- **Dawn Hunziker** – Assistant Director, Digital and Physical Access / Disability Resources, University of Arizona
- **Deborah Sullivan** – Director, Center for Disability Access and Resources (CeDAR), Florida A&M University
- **Stephanie Cawthon** - Professor and Graduate Advisor / Associate Chair, Educational Psychology, with appointment in Special Education, University of Texas at Austin
- **Ken Fleishman** – Professor, School of Information and Director, Undergraduate Studies, University of Texas at Austin

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Accessibility is a Journey

Accessible University Initiative

Danie Remmick

Senior Accessibility Program Manager

Microsoft

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Accessibility is a Responsibility

1+ billion people with disabilities worldwide

Permanent

(one arm)

Temporary

(arm injury)

Situational

(stress)

COVID has disproportionately affected people with disabilities

Long Covid (UK) 550K+
Mental Health (US)
screening ~+800%
2020

People with disabilities
paid 87 cents on the
dollar compared to
workers without
disabilities

The poverty rate
for people with
disabilities –
26 percent

Hiring disabled talent,
can increase talent
pool 10+ million
people in US alone

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Bridging the Disability Divide

A new technology-led five-year commitment to create and open doors to bigger opportunities for people with disabilities.

Focus areas:

1. Technology
2. Talent Development
3. Employee Experience
4. Policy
5. Partnership

Learn more:

[Accessibility Commitment](#)

Doubling down on accessibility: Microsoft's next steps to expand accessibility in technology, the workforce and workplace

Apr 28, 2021 | [Brad Smith - President & Vice Chair](#)

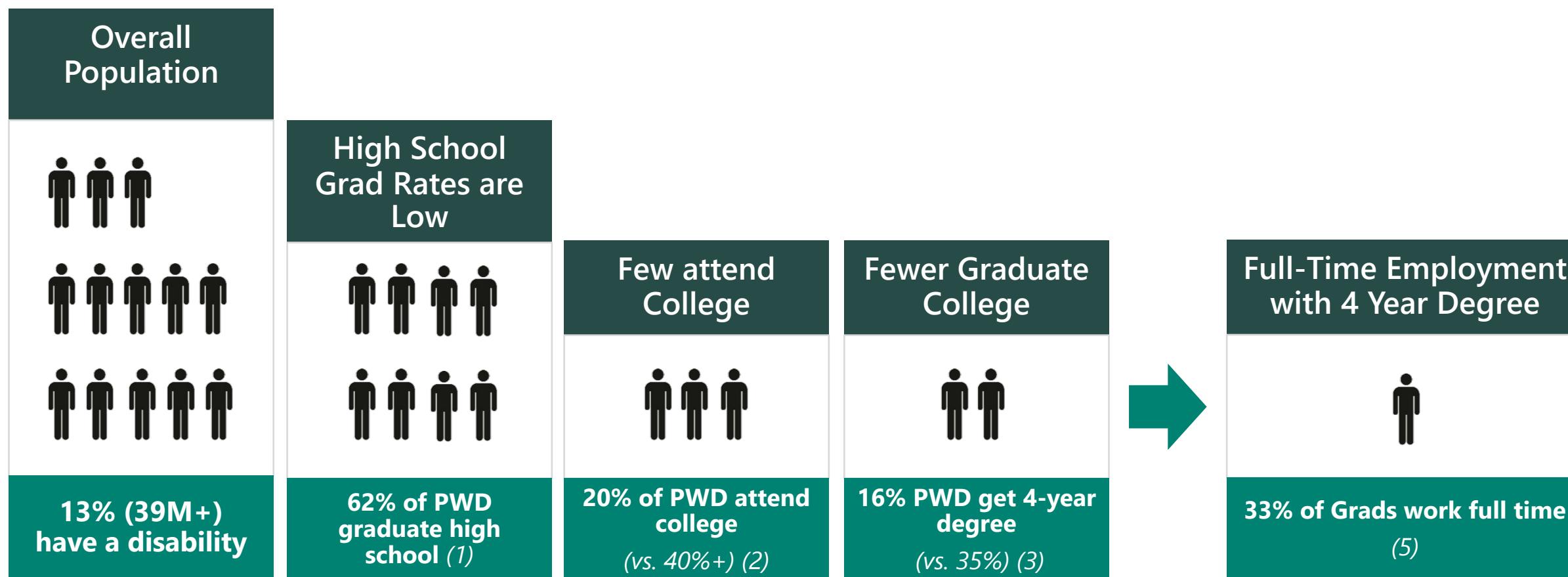


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A lifetime of Challenges (US Statistics)

People with disabilities are less likely to complete a bachelor's degree and experience lower full-time employment.



Sources: 1. Building a Grad Nation, 2. Inside Higher Education, 3. and 4. Bureau of Labor Statistics, 5. Cornell University Disability statistics

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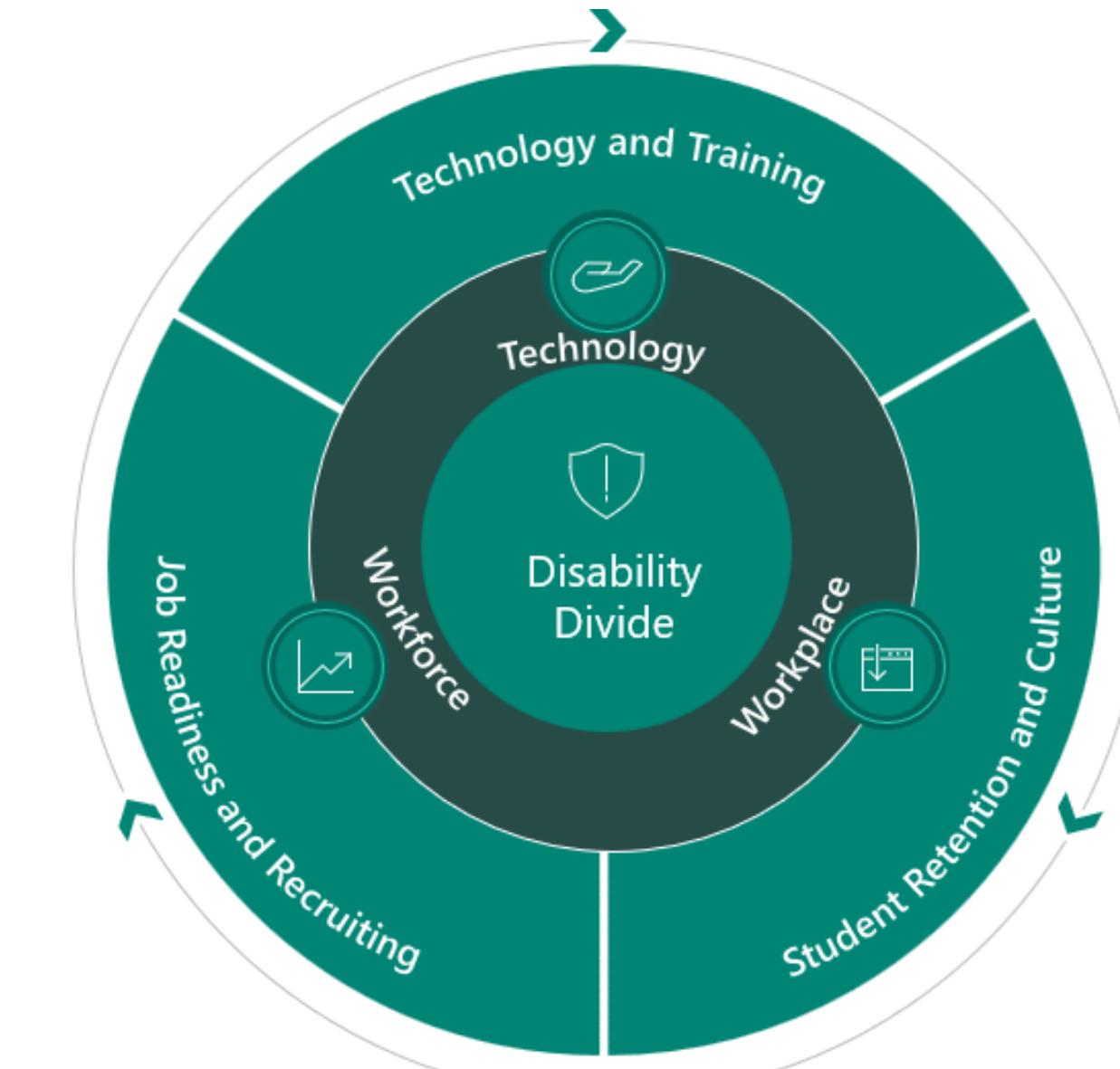
Disability Divide Strategy

The Accessibility University Initiative:

- 7 selected North American Universities
- 1-3 proposed outcomes per school
- Provided investment grants
- Timeline Fy22 +

Goals:

- Increased graduation rates for Pwd
- Universal Design in STEM education
- Develop work-force ready talent



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Partnering Universities



University of
Texas at Austin



University of
Arizona



University of
British Columbia



Bellevue College



Rochester
Institute of
Technology



Florida A&M
University



Georgia Tech



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University of Arizona

- Office 365 Tools and Accessibility in STEM Courses
- Esports – Inclusive Gaming, Research and Education



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Office 365 Tools and Accessibility in STEM courses

- Collaboration between the Disability Resource Center, Think Tank tutoring center and a Management Information Systems course.
- Workshops developed that leveraged MS Teams
 - Teach communication options.
 - Provide trainings that show simple changes/tools available in the Office 365 environment.
 - Pilot to assess student's needs for training on technologies.
 - Impact study for Creative and Professional Software

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Esports – Inclusive options for everyone

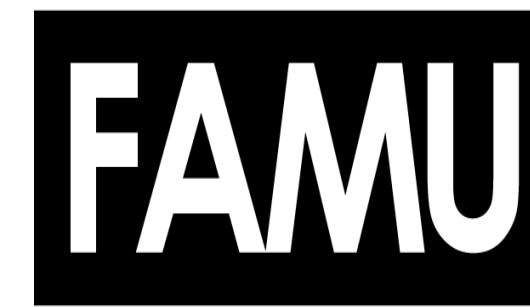
- Collaboration between Disability Resource Center, Adaptive Athletics, Esports Arena and Esports Varsity Teams.
- Held first successful Esports Open House, April 2022
 - Goal was to showcase the inclusivity of the gaming environment.
 - 240 unique visitors during the Open House with over 140 hours of game play in the Arena.



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MICROSOFT UNIVERSITY PARTNERS SHOWCASE



FLORIDA A&M UNIVERSITY
**CENTER FOR DISABILITY
ACCESS AND RESOURCES**



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PROPOSAL

- College Study Skills Institute (CSSI)
- Post-Graduate Transition Program
- Universal Design for Learning
- Assistive Technology

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FOCUS 2021-22

- Post-Graduate Transition Program
- Universal Design for Learning

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POST-GRADUATE TRANSITION PROGRAM

Employment Rate	Disability
Time Period	2021
Age Range	16-64
Labor Force Participation Rate	35.1%

Youth employment Rate

2021 Youth Labor Force Participation Rate

Age	Disability	No Disability
Age 16 to 19	24.3%	36.8%
Age 20 to 24	46.7%	72.0%

<https://www.dol.gov/agencies/odep/research-evaluation/statistics>

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POST-GRADUATE TRANSITION PROGRAM

- Create/Hire a position for a Transition Specialist
- Collaboration with Career Services
- Actively participate in employment related activities on campus
- Develop relationships with companies
- Actively participate in employment related events and programs outside of campus
- Conduct resume reviews, develop interview skills, soft skills, job searches
- Graduate-GRE, applications, essays

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UNIVERSAL DESIGN FOR LEARNING

- Collaboration with Associate Provost
- CAST contracted for professional development
- Level I credentials
 - UDL Overview with Focus on Accessibility
 - UDL in Your Syllabus
 - UDL in Assessment
 - UDL and Digital Technology to Support Engagement
 - UDL and Gamification

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UNIVERSAL DESIGN FOR LEARNING

- Level II Credentials
 - Train-the Trainer
 - 2 Group sessions, 1.5 hours each
 - Deliverables-Journey mapping, UDL Design Process
 - Certified as UDL Coaches

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CONTACT INFORMATION

Deborah Sullivan

Deborah.Sullivan@famu.edu

850-412-5919

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Transforming Higher Education From the Inside Out



The
**Collaborative for
Access & Equity**
(Pilot)

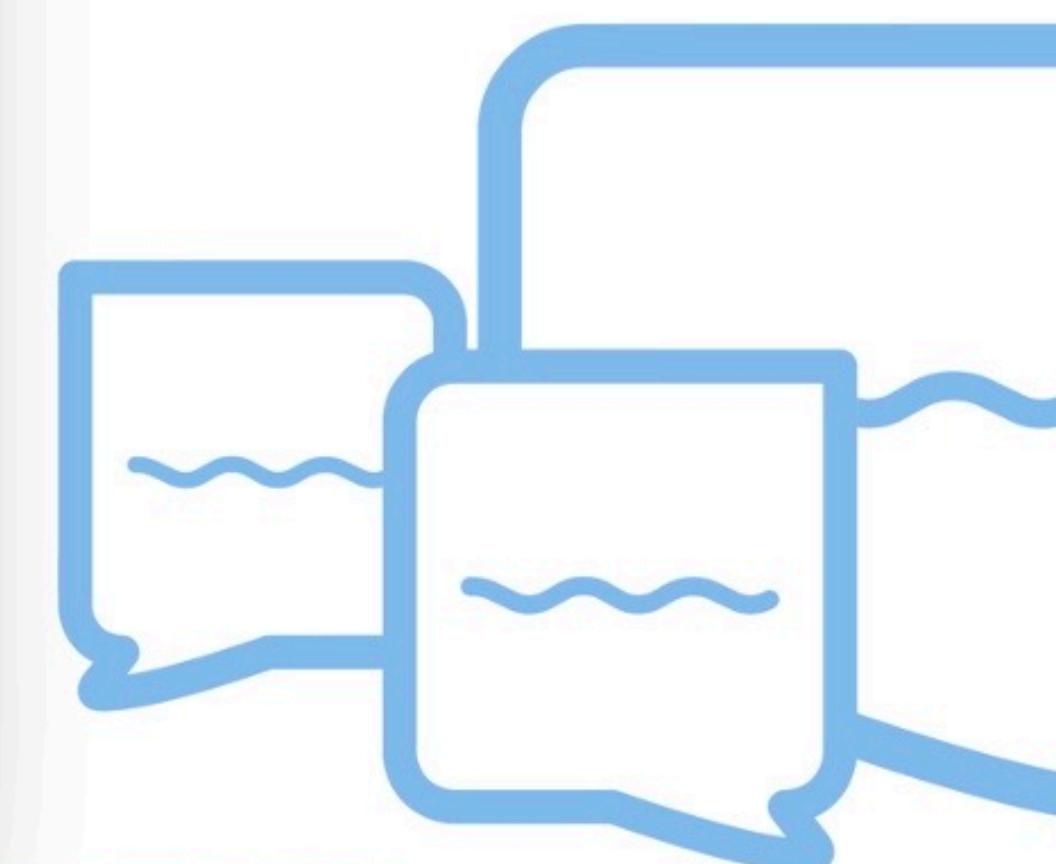
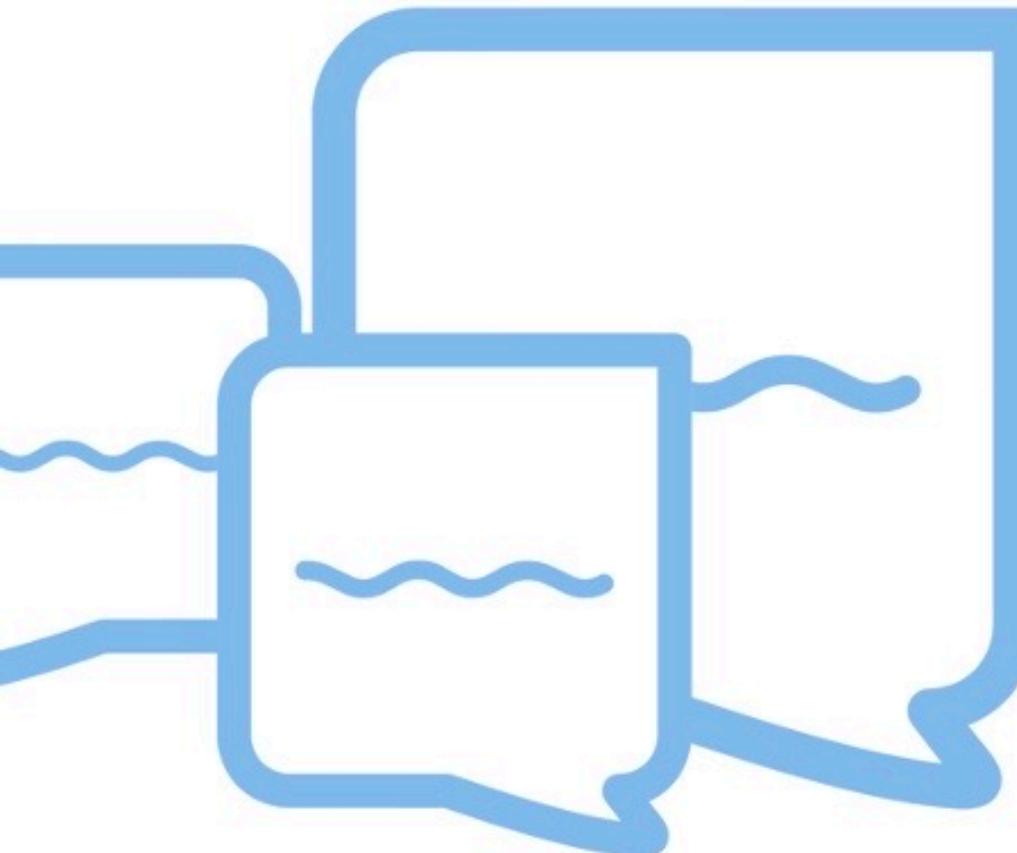


by **Stephanie W. Cawthon, PhD**



StephanieCawthon.com/Collaborative





“One of the really amazing things is that we were able to have these conversations in a space where people felt like they could be open and honest, and that is so important to the learning.”

Faculty Member



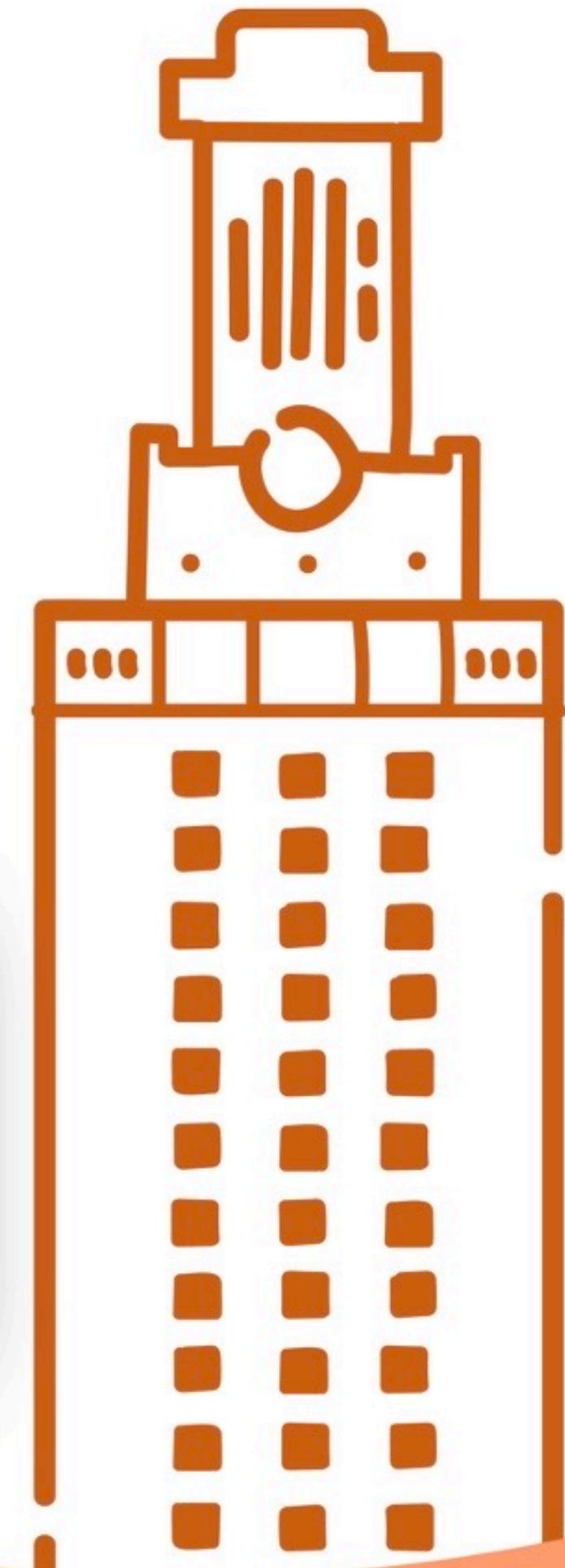
25+
UT Austin
Departments



45+
People



1000+
Collaboration
Hours



Collaborative Outcomes



- ~ Creating a culture of access
- ~ Making accessibility easy
- ~ Leveraging technology for learning
- ~ Leading as ambassadors for change
- ~ Centering disabled student experiences

Top Takeaways



- Disabled students are at the heart of any accessibility initiative.
- The key starting point? Awareness of ableism, disability, and access.
- Access is more than accommodations; it requires a mindset shift.
- Technology can support, but not replace, an accessibility mindset.
- Breaking down campus silos requires many dialog points and a central focus.
- Course planning needs to shift from reactive to proactive strategies.
- People will take risks in safe spaces and intentional conversations.
- Small steps and iterative improvement is the path to success

StephanieCawthon.com/Collaborative



Let's
Connect



Stephanie W. Cawthon, PhD



StephanieCawthon.com



stephanie.cawthon@austin.utexas.edu



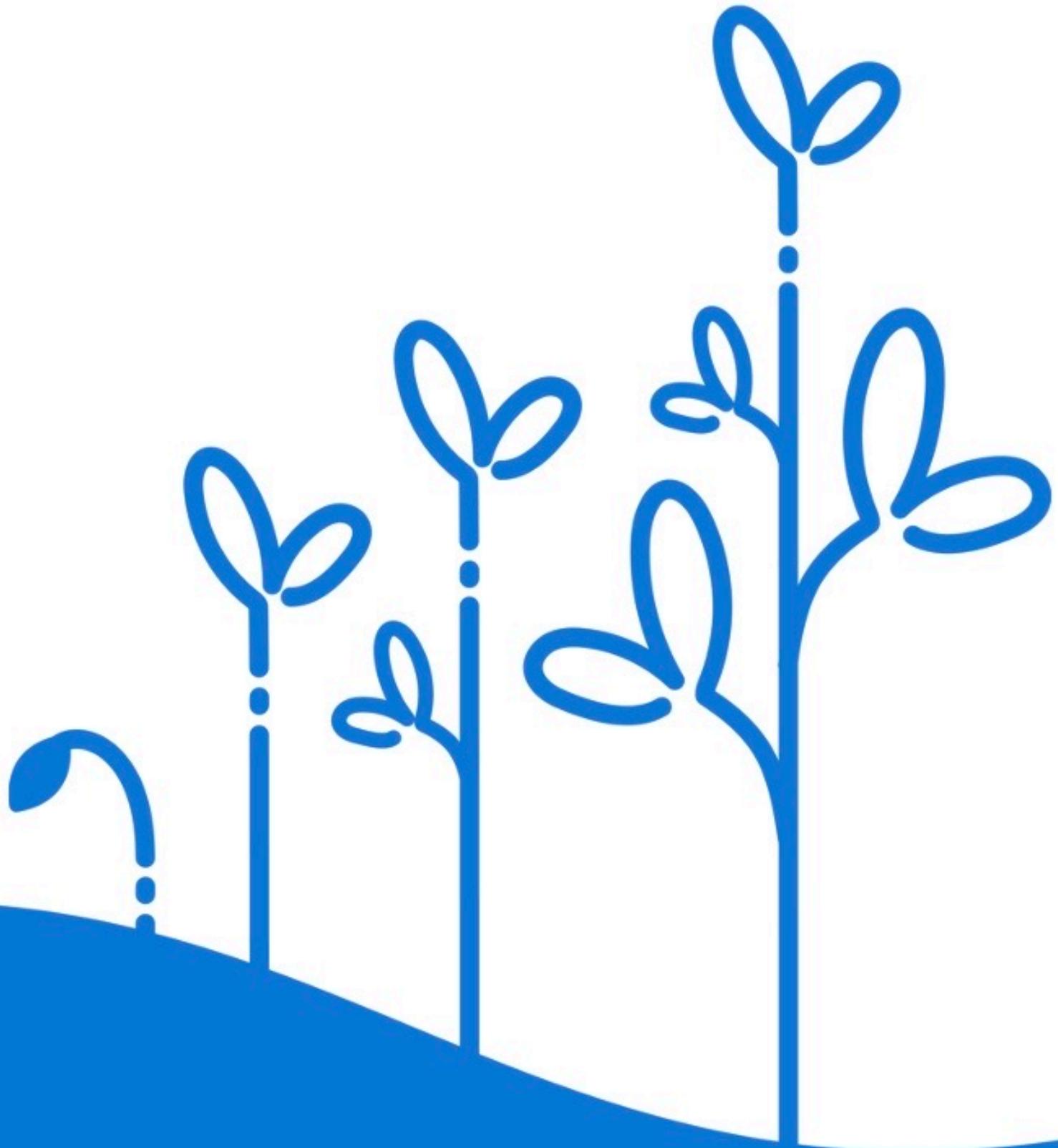
[@swcawthon](https://twitter.com/swcawthon)



linkedin.com/in/stephanie-cawthon/



**Thank
you!**



StephanieCawthon.com/Collaborative

Smart Tools: Making Work Accessible



Kenneth R. Fleischmann
Professor, School of Information
Founding Chair, Good Systems



Sherri R. Greenberg
Professor of Practice, LBJ School
Executive Team, Good Systems

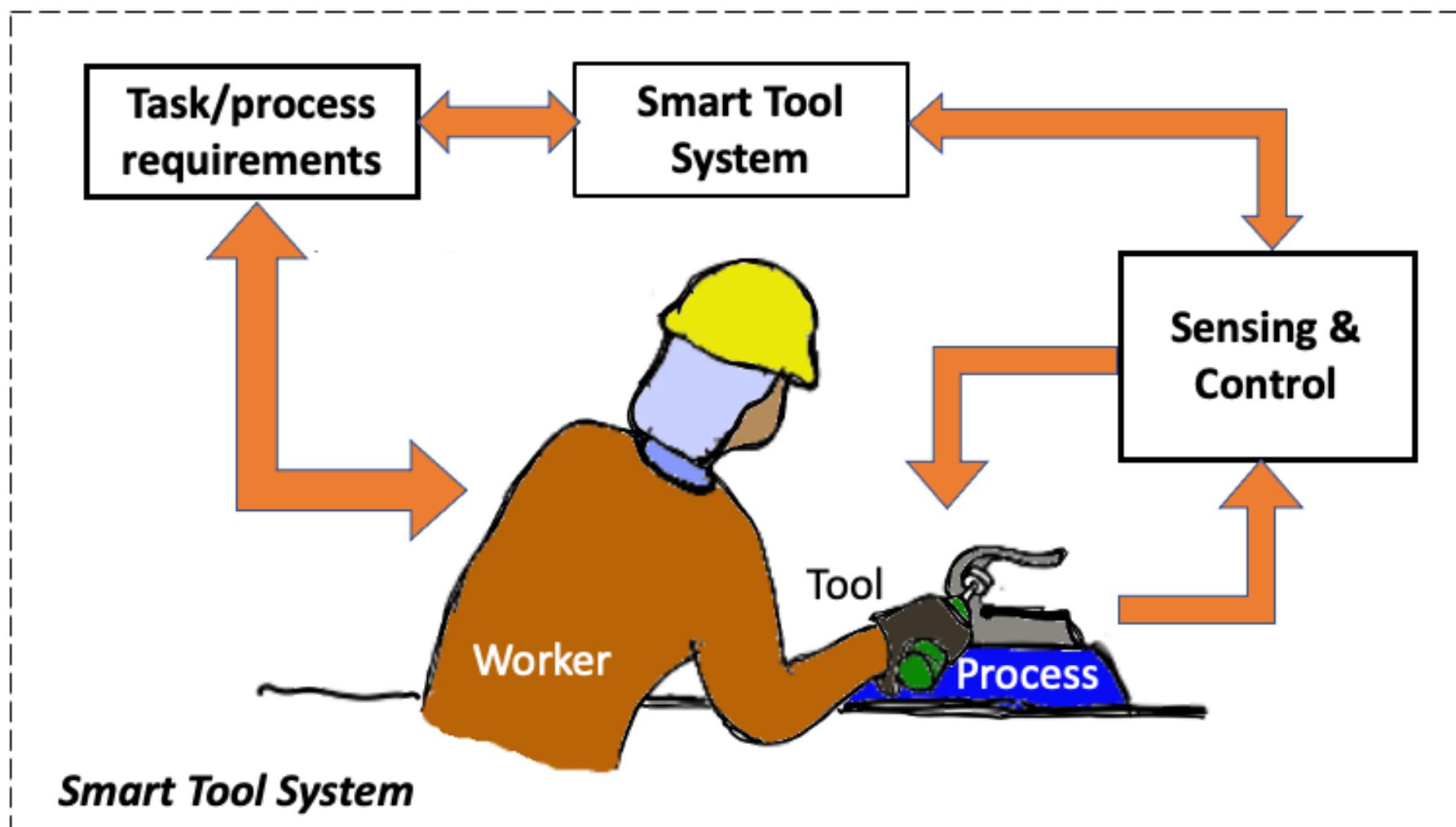


Raul G. Longoria
Professor, Mechanical Engineering
Core Researcher, Good Systems



Sandeep Chinchali
Assistant Professor
Electrical & Computer Engineering

Making Smart Tools Work For Everyone



- Smart hand tool systems **empower** workers who perform critical manual tasks and promote **safety**.
- Equipping hand tools with **sensors**, **IoT**, **edge AI** to provide workers with real-time and retrospective feedback that can facilitate their training, avoid workplace accidents, prevent repetitive stress injuries, and make work more **accessible**.

Research Questions

- What is role of AI in the future of middle-skill work?
- How can AI help, rather than replace, workers?
- How can smart hand tools accommodate workers with a wide range of abilities?

Case Study: Texas Longhorn Racing



- A cooperative student organization that designs, builds, and tests combustion, electric, and solar racecars
- 14 semi-structured in-depth interviews with students with different levels of experience with tools used in manufacturing cars, analyzed using thematic analysis
- Conference proceedings paper at ASIS&T 2022 (October, Pittsburgh)

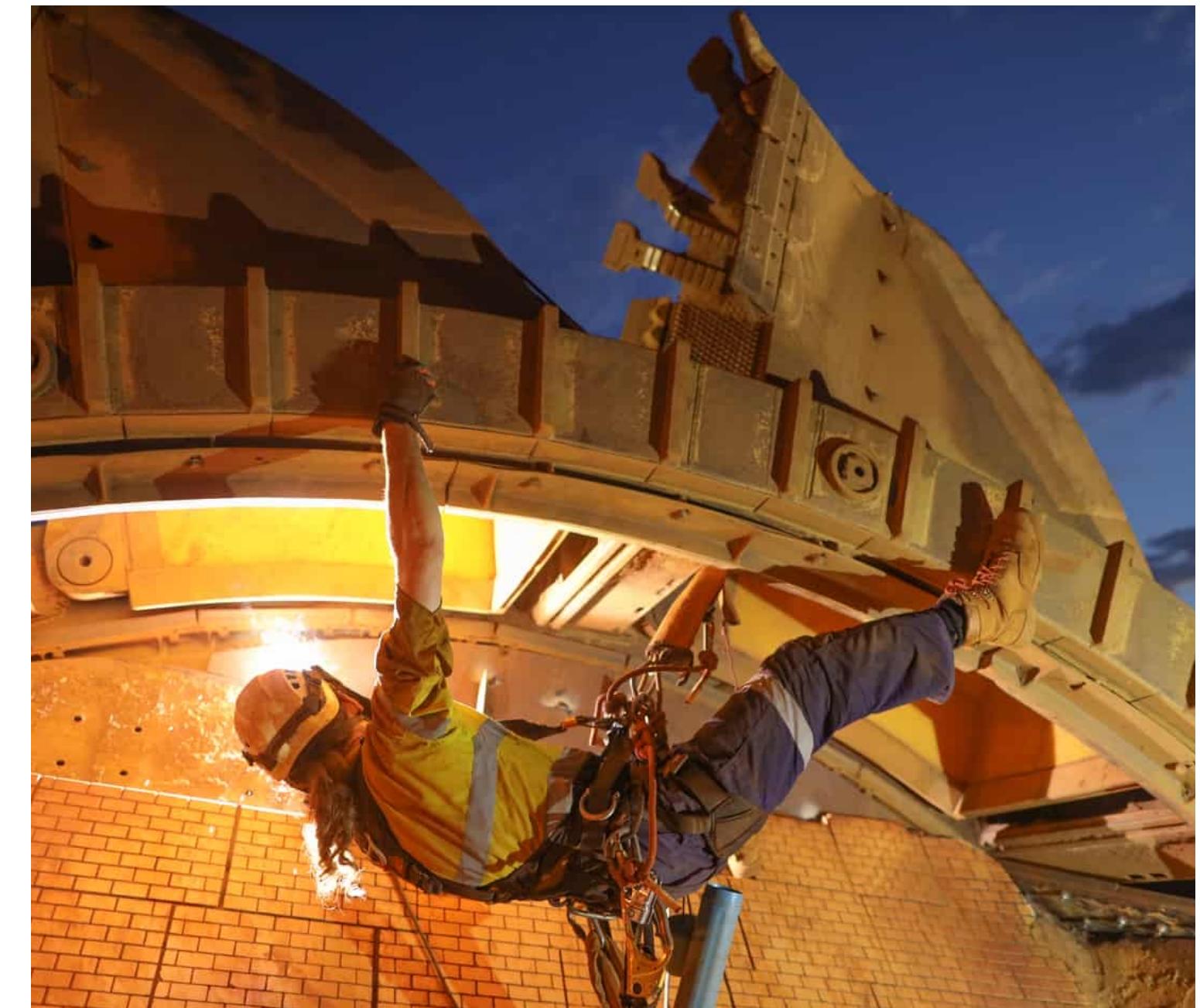
Welding: Dangers

“I mean, obviously there's a lot of risks involved with it. So, like you know, you have like a gas chamber and it's like, if you open it too fast, it can blow up or it and it's like running electricity through a table so you can shock yourself, you can burn yourself. So, safety wise there's probably ways you can improve.” Interviewee #8



Welding: Challenges

“I would say, currently, you control the voltage with the foot pedal, like I said earlier. But, for example, last Saturday, my friend ... had to stand on a table and weld above the oven basically, on top of it, and having the foot pedal in that scenario would have been pretty hard to use, especially like on an elevated platform, or, you know, if you're kneeling down trying to get under the car. **So having a different way of controlling the voltage but having that still be tactile would be useful.**” Interviewee #6



"What positive implications could you see emerging from the development and deployment of smart hand tools?"

"I think definitely, accessibility to...a wider range of individuals. Just because, giving out data is an extra degree of personalization. So they'll make things better rather than assuming that everyone has the same...capabilities...having a tool that can adjust...instead."

The Future of Welding



How can we improve welding tools to accommodate workers' abilities?

Case Study: Deaf Welder of America



Deaf Welder of America

• Public group · 437 members

Join group

<https://www.facebook.com/groups/365157526830397/>

- What are the challenges and benefits that Deaf welders experience in welding?
- How can smart technology be used to make welding tools or processes more accessible to Deaf welders?
- Four semi-structured in-depth interviews with deaf welders
- Conference proceedings paper submitted to iConference 2023

Turning Audio Information into Visual Information

“If I get the mixture, right, the green light pops on, you know what I mean? Because everybody else can depend on the hearing of the mixture. I just didn’t. I mean, it’s a visual – to see the flame.” (Participant 1)

“Something that senses range or tells you to slow down something like that... something that you can see if something’s too hot and it’s flashing an alarm at you. That’s not necessarily related to just being Deaf, but that could work for anyone.” (Participant 3)

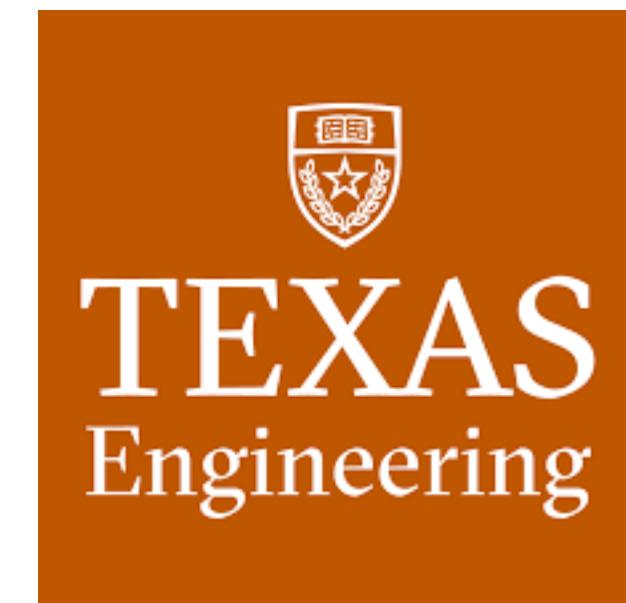
Thank you to our collaborators and funders



Ken Fleischmann



Sherri Greenberg



Raul Longoria
Sandeep Chinchali

Lunch Break

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Panel Discussion

Lessons Learned During COVID-19: Forward-Looking Practices

- Moderator: **Warren Goetzel (Co-PI)** - Director of Academic Technology and Engagement, Office of Information Technology, Georgia Tech
- **Anne Jannarone** - Assistant Dean of Students / Director, Georgia Tech Disability Services
- **Shubha G. Kashyap** - Director of Student Affairs and Faculty Relations, Nexus, College of Engineering, University of Michigan
- **Rebecca Ewing** - Lecturing Fellow, Spanish Language Program, Duke University
- **Mark Lannaman** - Master's Student, Georgia Tech and Every Learner Everywhere Fellow

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Discussion Prompts

Lessons Learned During COVID-19: Forward-Looking Practices

- What are some examples of effective practices that have been implemented in your institution to support students with disabilities?
- What lessons might be applied in the future to realize the mission of greater accessibility for all students?
- For faculty and staff - What partnerships across your campus were you able to forge that will enable access and equity in the post-pandemic era?
- For students – What would you like to see more of in terms of implementation and cross-institutional partnerships that will help enable access and equity for diverse student populations?

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a Quasi-Post-Pandemic World 2022**



Closing Remarks from Dr. Yakut Gazi (Co-PI)

Vice Provost for Learning Innovation and Digital
Education, Duke University

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