MEETING FACULTY IN THE MIDDLE
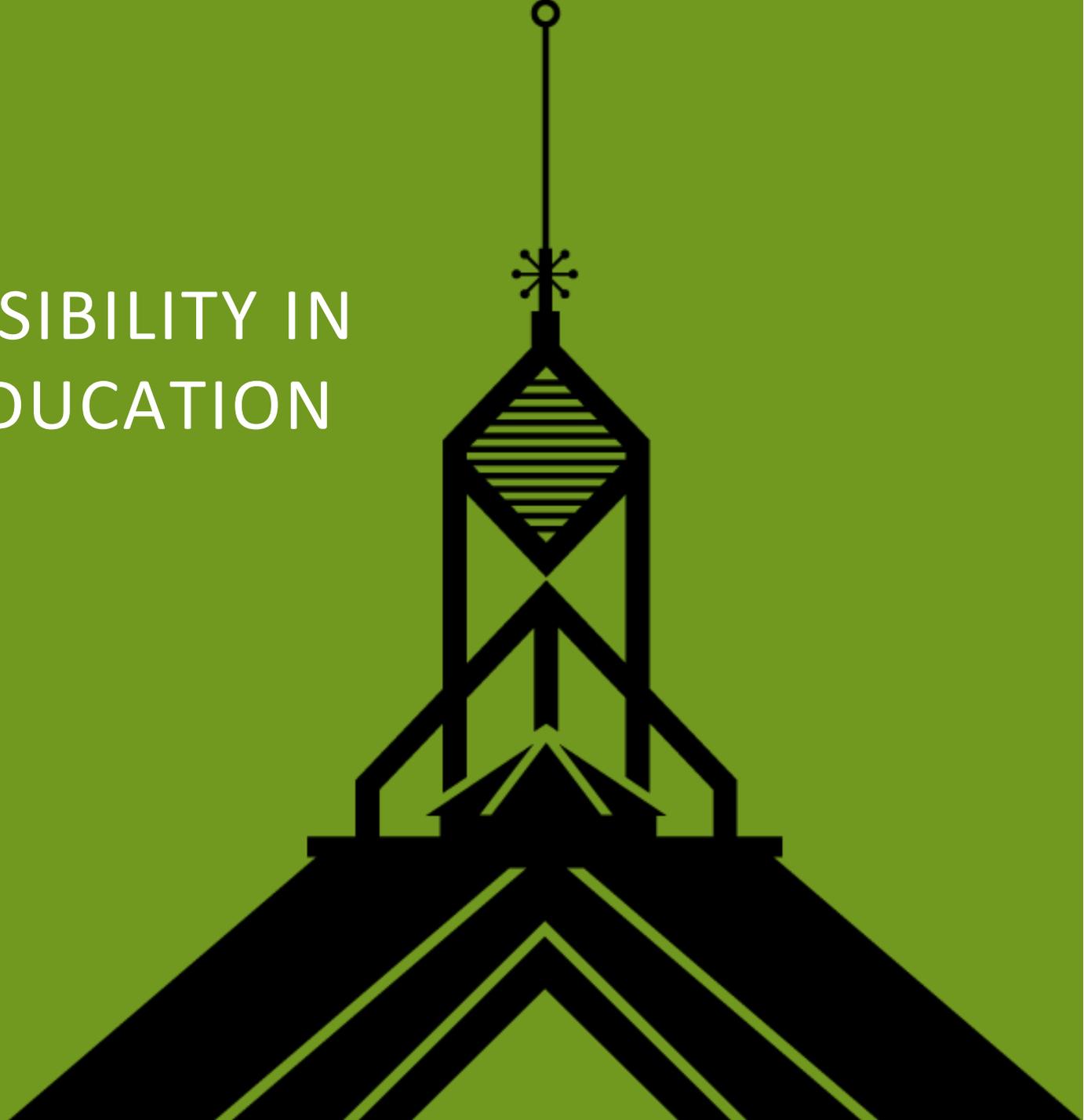
Practical Strategies for Helping Instructional Faculty Implement Inclusive Teaching Practices

Korey Singleton, Ph.D., ATP, RET
ATI Manager

Accessible Technology Symposium
April 2019

ICT ACCESSIBILITY IN HIGHER EDUCATION

Existing Disability Support Model in Higher Education

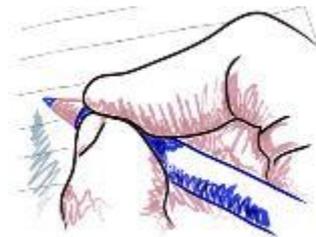"Existing strategies for supporting SWDs in higher education rooted in '*medical model*' (Burgstahler, 2012)."

DISCLOSE	DOCUMENTATION	ACCOMMODATION

Extended time

Notetaking support

Interpreter

Trends in Higher Education

Disability Rates in Higher Education Increasing

- Increasing # of SWDs enrolling in higher education (U.S. GAO, 2009).
- Greater variation in types of disabilities…(Digest of Education Statistics, 2011).
- **SWDs have lower participation and completion rates in higher education than their nondisabled peers (Mamiseishvili & Koch, 2011).**

Growing Role of Online Learning in Higher Education

- Increasing role of online learning in higher education (Allen & Seaman, 2013).
- **Increasing adoption of newer and more innovative EIT (Kim, 2011).**
- Inaccessible EIT can adversely impact the ability of a SWD to access course content (Bühler, Fisseler, & others, 2007; Fichten, Asuncion, Barile, Ferraro, & Wolforth, 2009).
- **Growing number of legal challenges against higher education institutions for implementing inaccessible EIT (Zou, 2011; Szpaller, 2012).**

Snapshot of Recent Litigation (Re: ICT Accessibility)…

- Inaccessible E-Learning Technologies
  - Educational technologies (i.e., captions, documents, LMS, CMS, supplemental applications, polling, library databases, etc.)
  - Websites/non-academic web-based resources

- All involve students with sensory impairments (blind, low vision, deaf, and/or hard of hearing)
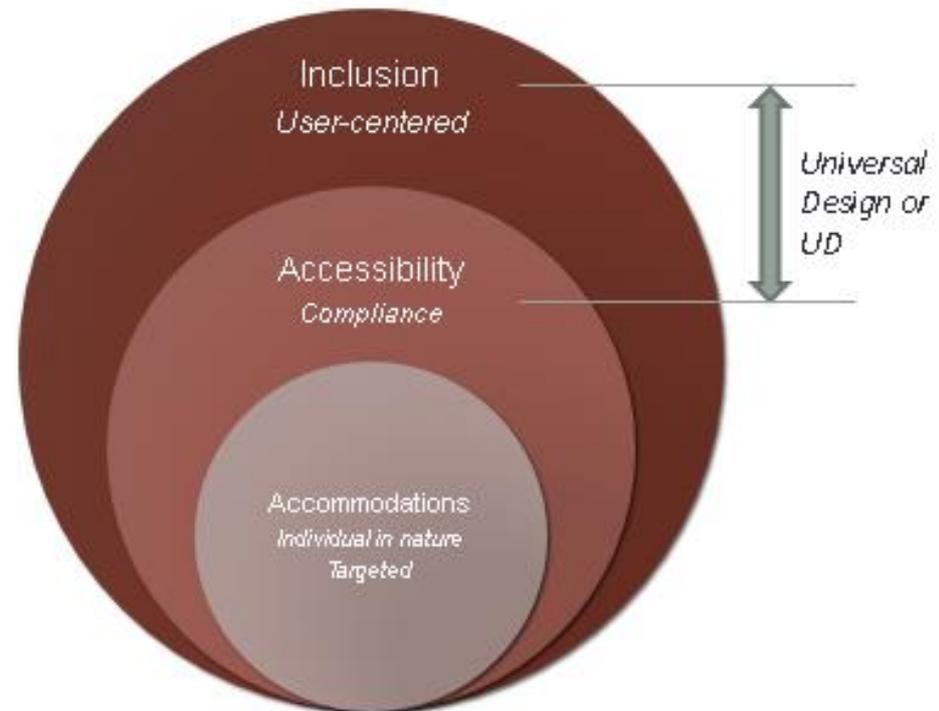
- **Possibly biggest issue of all…**
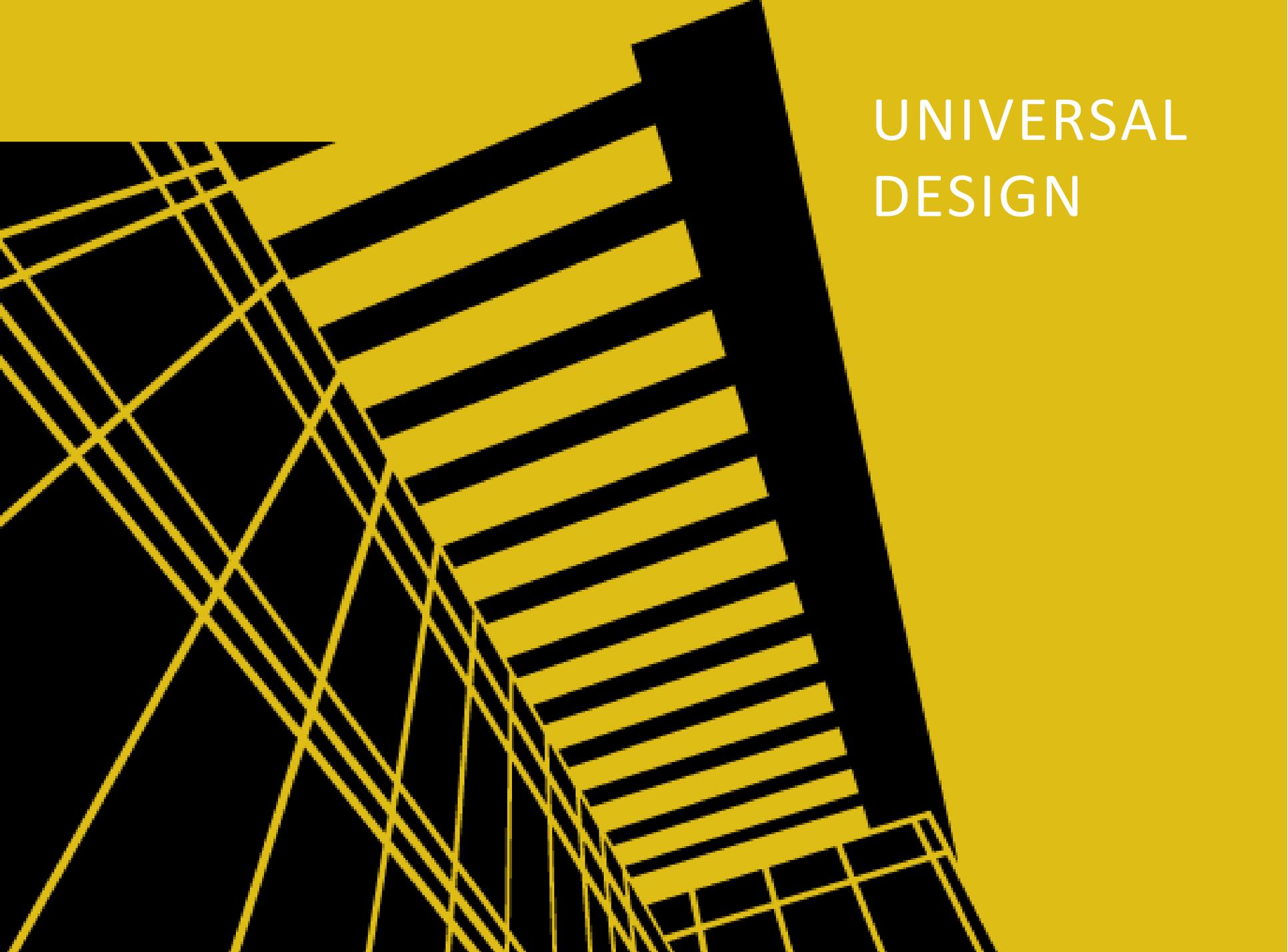
UNIVERSAL DESIGN

Accommodation vs. *Accessibility* vs. *Inclusive Design*

- Model adapted from presentation given by Luis Perez, *Apple ambassador*

- Takeaway: ***Rather than focusing on individual solutions, use broad strategies***

Inclusion
User-centered

Accessibility
Compliance

Accommodations
Individual in nature
Targeted

Universal Design or UD

Why Universal Design?

- Term borrowed from the movement in architecture and product development that calls for curb cuts, automatic doors, video captioning, speakerphones, and other features to accommodate a vast variety of users, including those with disabilities.
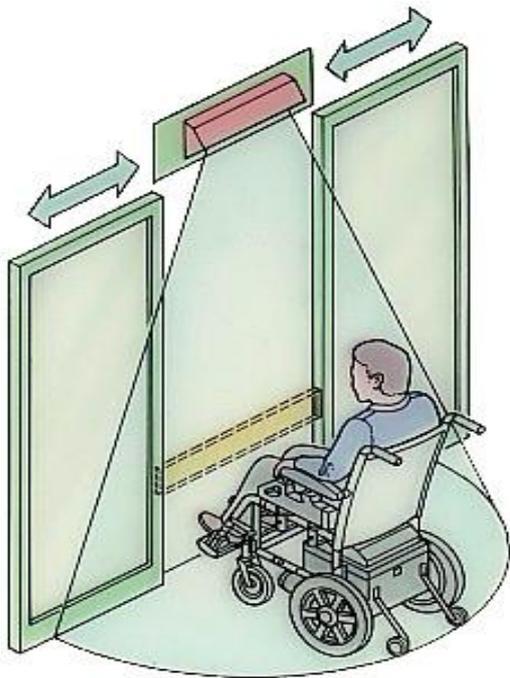
Think about your users…

Example #1:
Curb Cuts/Automatic Doors

Example #2:
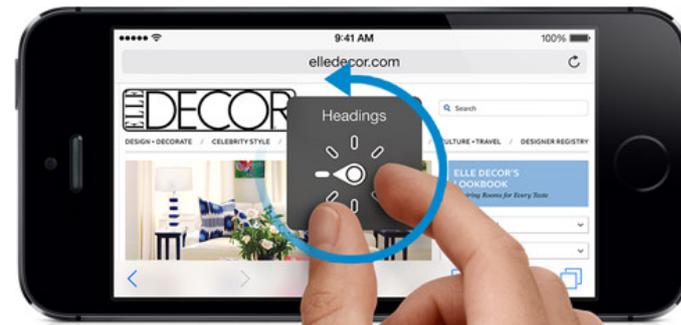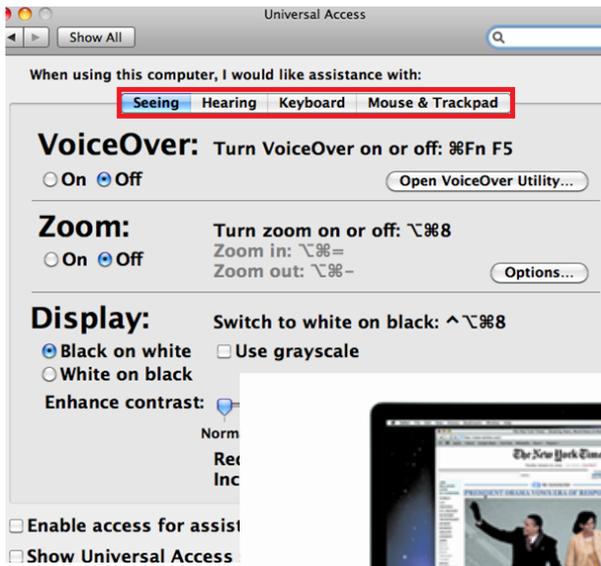## *Stairs/Ramps (GMU)*

Front Entrance
(Aquia Building)

Ramp Access between
Aquia and SUB I

Example #3:
Computers/Mobile Devices

Example #4:
Accessible Video Player: OzPlayer

All controls accessible via keyboard

Accurate, synchronized Captions

Interactive Video Transcript

Synchronized audio description

remember, they're proud of the thing that they've created. You want to make sure that

▼ Video transcript

going to be this huge process and this complete throwaway of everything that they've done—because

remember, they're proud of the thing that they've created. You want to make sure that

you're helping them to make that thing better, not just calling their baby ugly.

UDL OR UNIVERSAL DESIGN FOR LEARNING

Key Points

"[Universal Design for Learning] UDL provides a blueprint for creating flexible goals, methods, materials, and assessments that accommodate learner differences." (CAST, www.cast.org)

- Current instructional approaches have common activities that create access barriers

- *Universal Design for Learning* (UDL) is **one** strategy to remove these barriers

- When implemented consciously these approaches improve the experience for all students, including those with disabilities

About UDL

Image taken from http://www.udlcenter.org/aboutudl/take_a_tour_udl

E.g., Multiple Means of Engagement

- **Heighten interest and monitor progress** by:

Small group activities/work

Journals/Personal reflections
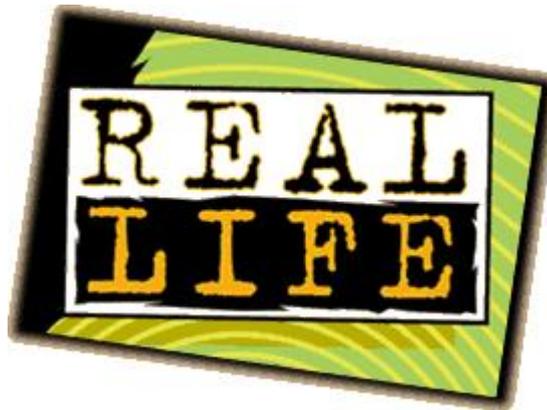
Real life demonstrations and experiences

Welcoming emails/messages

E.g., Demos/Hands-On (Project-Based Learning)

Lab demonstrations
(e.g., hackathon)

Work experience

E.g., Multiple Means of Representation

- Offer **multiple options to perceive and comprehend information**:

Audio

E-books

Video with captions and transcripts

Lecture

Web-based Tools – Library Databases (Full-text HTML, ReadSpeaker)

Inglés/Português ▼ | Translate

Ability to translate text

Title: Providing Access to Engagement in Learning: The Potential of Universa Issue 3

Database: Education Research Complete

Providing Access to Engagement in Learning: The Potential of Universal Design for Learning in Muse

Downloadable mp3 file

Contents

📖 Listen ❚❚ ■ American Accent ▼ ⚙ ↓ «

Also available as separate PDF

Following p... ...e of the Americans with Disabilities Act of 1990 (ADA), many museums improved the accessibility of their f in museum e... ...es. Universal Design for Learning (UDL) provides an alternate model for the design of m seum program not only physi... ...ut also access to engagement in learning. In this article we argue that UDL has ... e potential to examples, we d... ...UDL design guidelines can be used to improve the probability that engagem ... will occur as i

IVE,

OF
DISABILITY

**DESIGNED
ENVIRONMENTS
AND THE
CONCEPT OF
DISABILITY**

ART

Built-in text-to-speech capability

The development of long-term, deep interest in topics of personal relevance is critically important to the s... people wi and cultivating such interests. Following passage of the Americans with Disabilities Act of 1990 (A.... ... reach of their programming and exhibit spaces to people with disabilities. The addition of wheelch exhibit offerings like the handheld audio guide system developed and implemented by the New provided. While the addition of such accommodations has had a substantial and positive impact on the ability of individuals w

Text Highlighting

**WHAT IS
UNIVERSAL
DESIGN FOR
LEARNING?**

Accessibility solutions provide for the improved physical presence of people with disabilities in museum spaces (for example low vision). But accessibility does not, on its own, allow for the engagement of people with disabilities in the museum expe

E.g., Alternative text descriptions for complex images

Process Diagram as Flow Chart
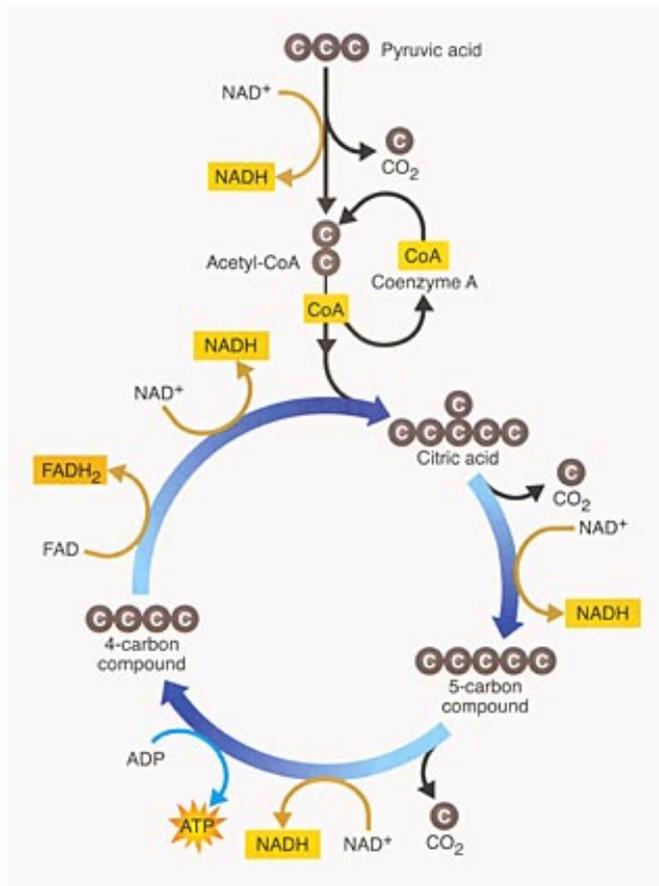
Description:

The Krebs Cycle is depicted as a linear reaction which leads downward into a cyclical reaction. Here, the steps of the reactions are presented as lists.

1. Linear Reaction
   - Pyruvic acid, a 3-carbon compound.
   - One carbon molecule is lost as part of a CO2 molecule.
   - An NAD-positive molecule enters the reaction, then leaves as NADH.
   - A 2-carbon acetyl group remains.
   - Coenzyme A, or CoA, joins the 2-carbon acetyl group to form Acetyl CoA.
   - CoA leaves the reaction as it delivers the acetyl group to the circular reaction.

2. Circular Reaction
   - The two-carbon acetyl group joins a four-carbon compound to form a 6-carbon compound, citric acid.
   - A carbon is lost as CO2.
   - NAD-positive enters, then leaves as NADH.
   - A 5-carbon compound remains.
   - another carbon is lost as CO2.
   - NAD-positive comes in and leaves as NADH.
   - ADP comes in and leaves as ATP.
   - A four-carbon compound remains.
   - FAD comes in and leaves as FADH2.
   - NAD-positive comes in and leaves as NADH.
   - Back again at the top of the circular reaction, a two-carbon acetyl group from the linear reaction enters, forming the 6-carbon citric acid at the beginning of the cycle.

Image courtesy of *NCAM Image Description Resources site*

E.g., STEM Content

- STEM can be particularly challenging
- Tactile graphics (more common), 3D printing (possible)

Whenever possible:

- Provide ***LaTex or MathML*** *(do not use Equation Editor in Word)*
- Avoid handwritten content

$$\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$$

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right)$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

E.g., Multiple Means of Action and Expression

- Offer **multiple options for demonstrating comprehension**:

VoiceThread

Papers

Oral Exams
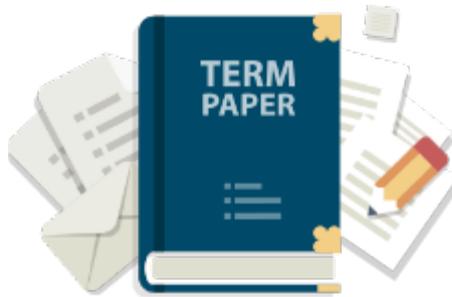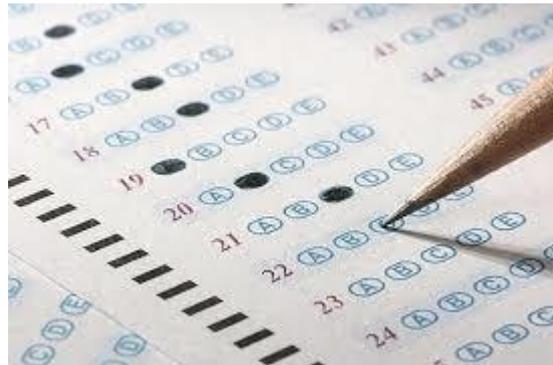
Tests/quizzes

Group presentation/project

E.g., VoiceThread, Kaltura, Bb

Screenshot of Voice Thread courtesy of Dr. Monica Mulholland.

Image courtesy of Mason Online Stories: Teaching Spanish Online
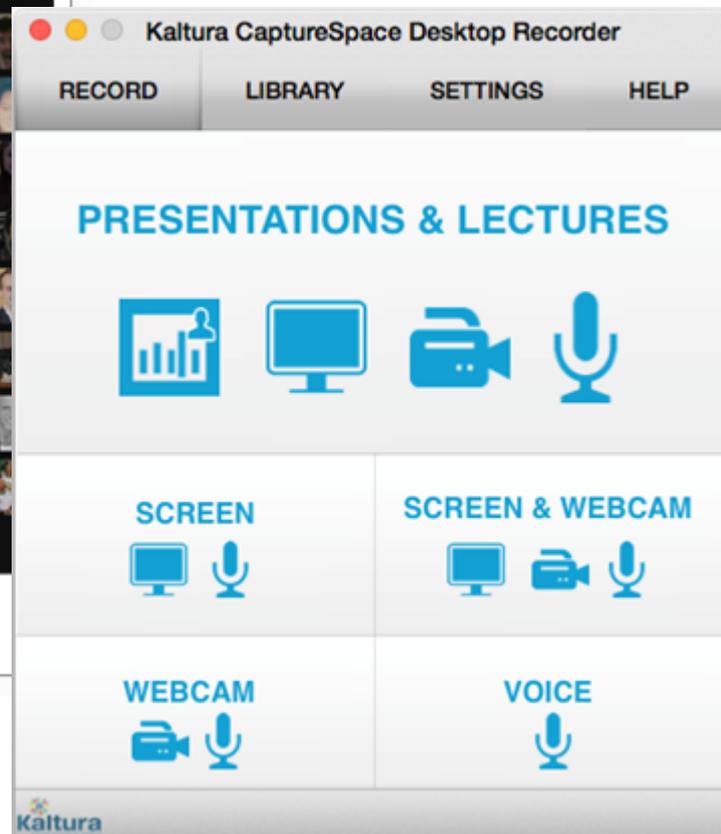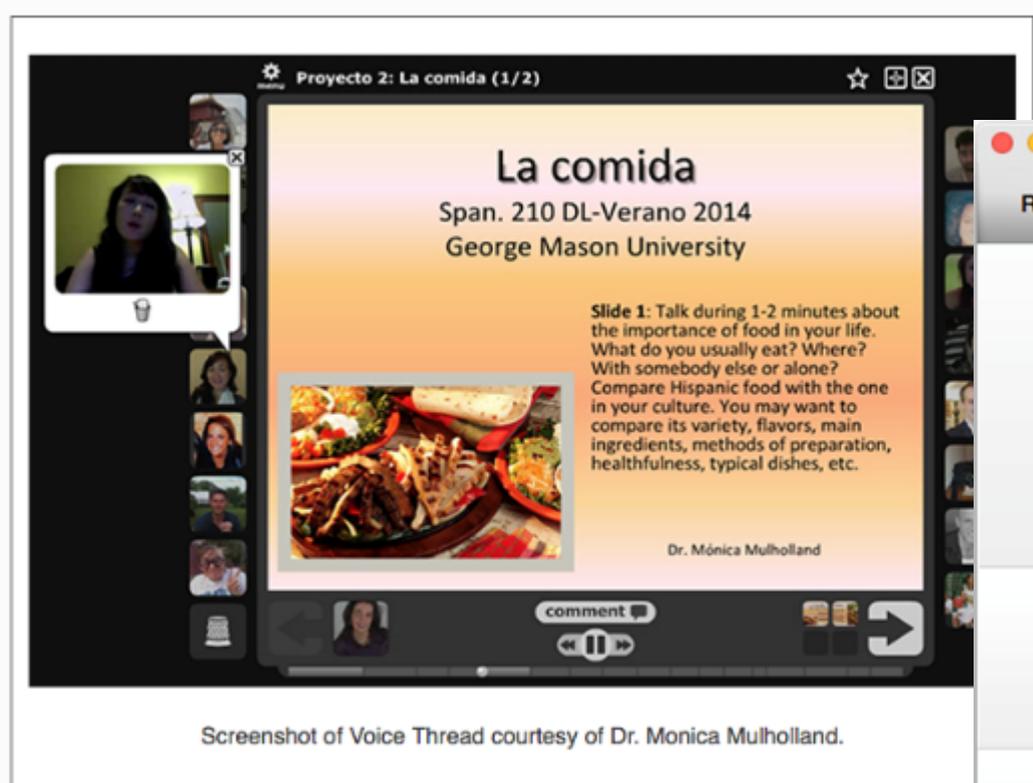
E.g., Personal Experience
(EDRS 824 – Research Methods)

- Course built around **three module assignments**

- Each module assignment offered students options for demonstrating comprehension:

  - *Module 1*
    - Four different writing assignments **(Choose 1)**

  - *Module 2*
    - Writing assignment, Flowchart/Mind Map with shorter writing assignment, Oral Presentation (w/ short PPT) **(Choose 1)**

  - *Module 3*
    - Writing assignment, Flowchart/Mind Map with shorter writing assignment, Oral Presentation (w/ short PPT) **(Choose 1)**

EXISTING SUPPORT STRATEGIES @MASON

Accessibility@Mason:
A Collaborative Partnership

Accommodations for Students w/ Disabilities

Accommodations for Employees w/ Disabilities

DS

CDE

ATI

Technology Accommodations/ICT Accessibility & Compliance
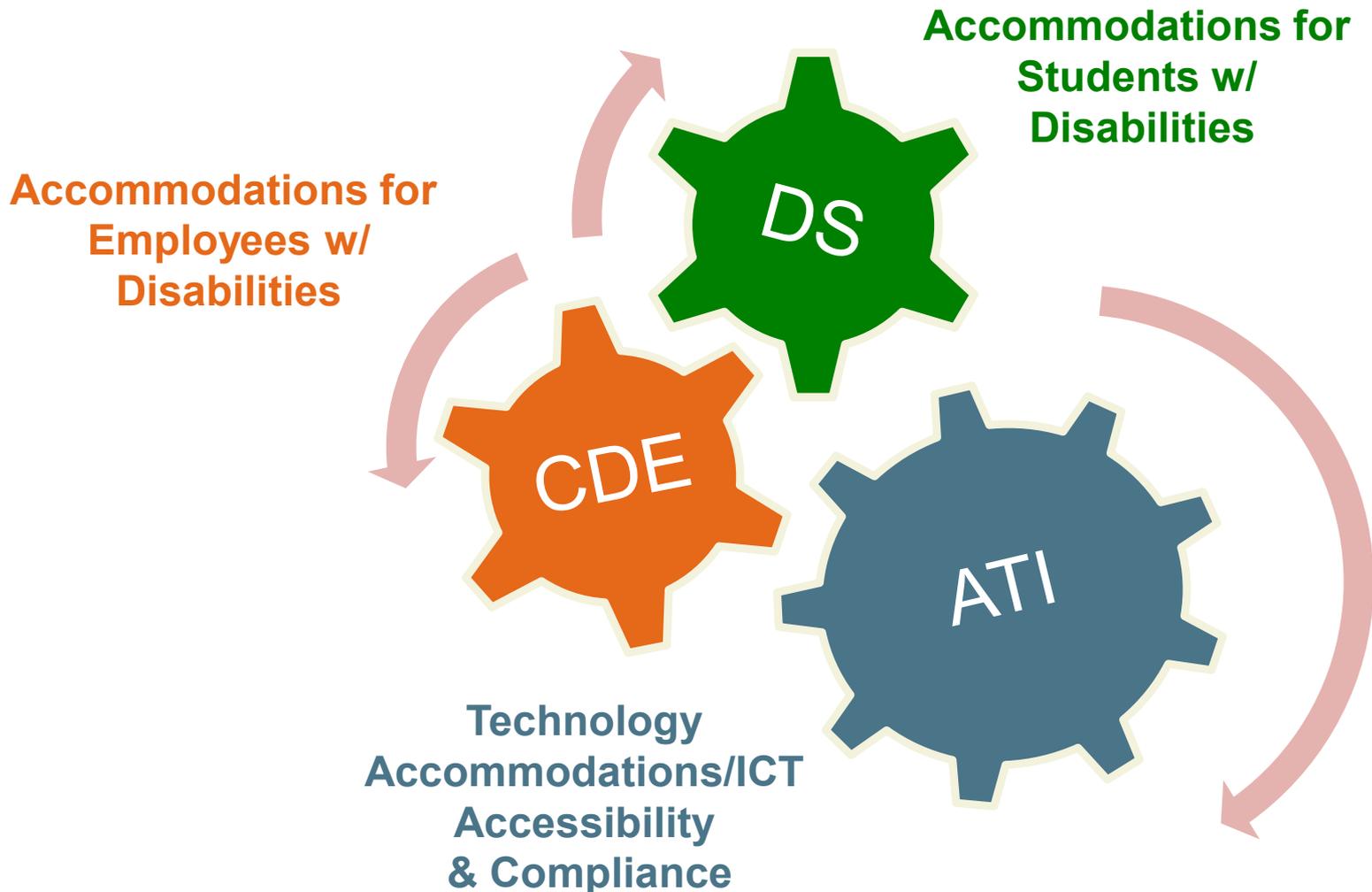
ATI's Role...

- In addition to the *provision of assistive technology resources*, the ATI works to ensures equivalent access to ICT resources for individuals with different learning styles and abilities in the Mason community through *video captioning*, *web and document accessibility*, *alternate formats*, and *training*.

HTML & CSS

STRATEGIC PLAN

High Risk/High Impact

Strategic Partnerships

✓ **Disability Services**
- Pre-semester faculty training workshops

✓ **Office of Digital Learning (Provost's Office)**
- OCDI Workshops (6-week cohorts)
- SOUPR (grant funded, year-long support)

- **Information Technology Services**
  - Online Learning Resources (Bb, Kaltura)

- **University Libraries**
  - Library requests, purchasing and procurement

- **Communications & Marketing**
  - Front-facing multimedia content

High Risk/High Impact Approach

- **Collaboration with Disability Services (DS)**
  - Focused on proactively addressing needs of students with sensory impairments (i.e., 120+ students)

- **Collaboration with Mason Online (ODL)**
  - Accessibility integrated in the online course development process

ICT Accessibility Training Approach in recent DOJ/OCR Settlements

Whole Institution (Top-down)

Proposed Mason Approach

Targeted Approach/Risk-Specific (High-Risk/High-Impact)

Working with DS (Existing)

- **Pre-semester faculty workshops** (2-3 weeks) for all instructors who have a student with sensory impairment in their course.
  - Emphasis on resources and what is needed from faculty (e.g., alt text, built-in layouts for PPT, etc.)
  - Additional one-to-one support offered to faculty unable to make workshops

Working with DS (est. Fall '19)

- **M**ason **A**cademic **A**ccessibility **P**lans or **MAAPS**
  - Focused on students with sensory impairments

- Involves **I**dentification, **E**ducation, and **F**ollow-up
  - **Identify** students, degree programs, academic courses students are enrolled in, Academic Advisors, Dept. Chairs
  - **Educate** Dept. Chairs and instructional faculty about support and training resources
  - **Follow up** to ensure remediation timelines are met and any new faculty are trained on available resources

Working with DS (est. Fall '19) cont.

A path forward…

- ✓ **~120+ students with sensory impairments** (~2-5 courses/student)…
- ✓ **~240 – 600 courses per semester**
- ✓ **~240 – 600 instructional faculty per semester**
- Degree programs?
- Department Chairs?
- Academic Advisors?
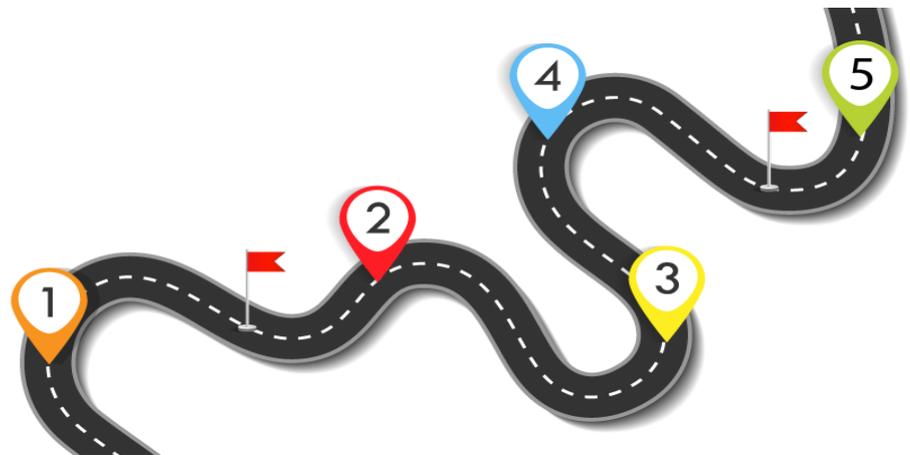
Working with ODL (Existing)

- OCDI faculty cohorts (6 weeks)
  - Faculty build one module of their online course
  - Faculty spend one entire week on UDL/accessibility

- SOUPR (full academic year)
  - Faculty, through grant-supported initiative, build entire online course with one-to-one ID support
  - MOU agreements with Depts. Include accessibility language
  - Instructor Contracts include accessibility language

- Course Accessibility Reviews (Open-Call, ODL-supported) – Provide *Faculty Action Plans*
  - ***Over 100 online courses reviewed*** *since Spring 2015*

SERVICE DELIVERY

Captioning & Transcription, Document Accessibility, and Web Accessibility

Accessibility As A Service…

Document Remediation*

Captioning & Transcription*

Web Accessibility*

* - Links lead to ATI presentations specifically addressing topic.

Captioning & Transcription

- Kaltura (Video Management Platform)
    - Integrates with Blackboard
    - APIs with captioning vendors (Cielo24, 3Play Media, Verbit)
        - Tagging to support different TATs (turnaround times)
        - Vendor uploads completed captions back to video
        - Use vendor supported editing tools for ease of any needed corrections
   - Support for other 3rd streaming services (e.g., YouTube, Vimeo, etc.)

Captioning & Transcription cont.

- Processed can be managed by one staff member
- Requests submitted using online request form (individual requests) or Excel spreadsheet (bulk requests)

- Scalable!
  - ~1,500 videos processed/year over last 3 years
    - Over 2,500 requests processed so far in FY19
  - Over 600 faculty/staff users
  - ~10,000 videos processed

- New statewide contracts!

Document Accessibility Reviews

- Started as service for faculty/staff teaching students with vision impairments and those building online courses through ODL

- ATI staff converts PPT, Word, and PDF documents into accessible formats using *CommonLook Office Pro* and Adobe Acrobat Pro DC (service includes remediation and quality control)
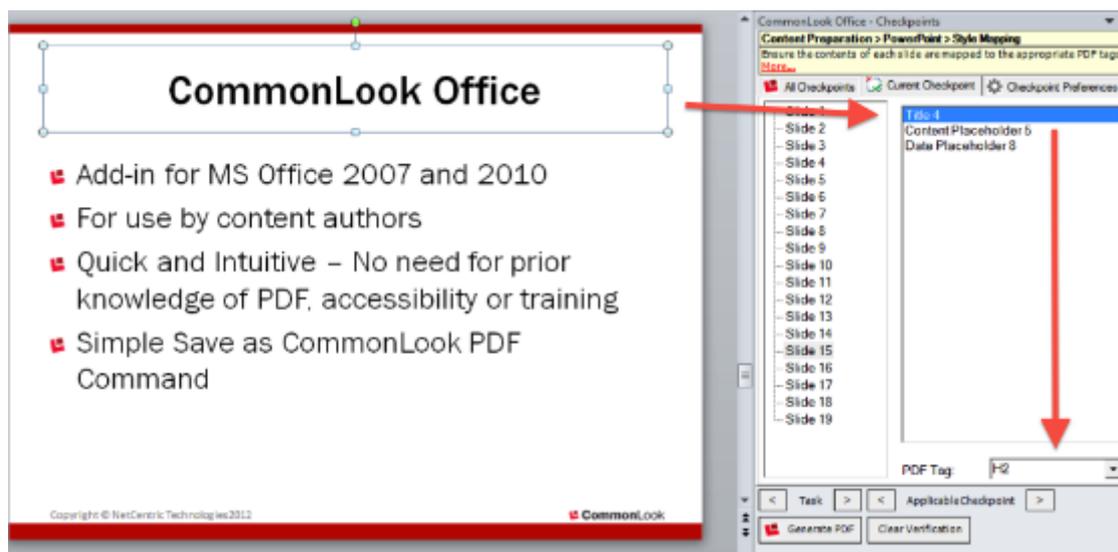
Faculty Responsibilities for Document Accessibility…

Before submitting your documents, the faculty/staff member must **add** the following:

- *Word* documents
  - Alternative text for meaningful images, charts, graphs, and objects*

- *PPT* presentations
  - Use built-in slide layouts*
  - Alternative text for meaningful images, charts, graphs, and objects*
    - For multiple images on one slide, **group** image and then add alt text for the grouped image.

- *PDF* documents
  - Send as is!

Document Accessibility Reviews cont.

- Service piloted in FY18
  - Had 40 faculty/staff participants
  - ~500 documents processed/~8,000 pages
  - By Format:
    - Almost evenly split between Word, PPT, and PDF
    - Findings revealed how faculty design content and where they struggled in terms of accessible design (e.g., table structure, built-in layouts for PPT)
  - By Type of Request:
    - Even split between accommodation and compliance

- In FY19, requests have nearly doubled!
  - Unique users nearly equivalent to FY18 totals

Web Accessibility

- Architecture Standards Review Board (ASRB) – Purchasing and procurement process

- Services involves review of 3rd-party websites or applications (e.g., Piazza, MATLAB, Pearson, etc.) for instructional faculty

- Review Process:
  - Automated reviews using OzART
  - Manual Reviews using JAWS/NVDA, JAWS Inspect, WAVE, ANDI, and/or CCA

TECHNOLOGY TOOLS & SUPPORTS

Assistive Technology, Alternate Formats

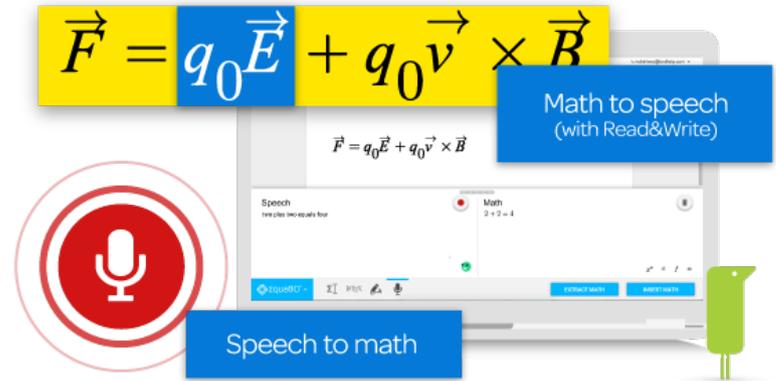# Assistive Technology Tools & Supports

Notetaking Supports

Sonocent Audio Notetaker

Smartpens

Text-to-Speech Supports

EquatiO

Read & Write

Alternate Formats

- **Memberships:** AccessText, Learning Ally, Bookshare

- *In-House*:
  - Use Textbook Accessibility Levels (AL) to streamline service delivery
    - AL1 (Automated)
    - AL2 (Manual)
      - Includes AL1 plus:
        - Chapter Headings and Additional Heading Levels as needed
        - Linked TOC
    - AL3 (Manual)
      - Includes AL1 and AL2 plus:
        - Bookmarks
        - Alternative Text for all meaningful images
        - Structured tables

Alternate Formats cont.
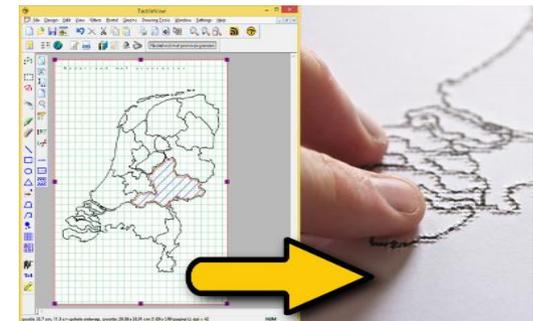
Braille Production

Juliet Pro 60 Embosser
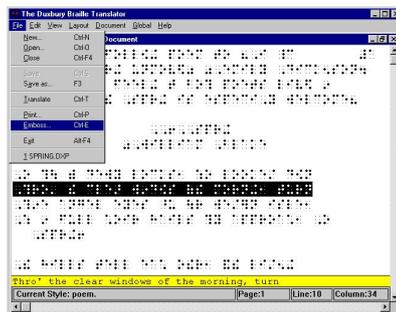
Duxbury

Tactile Graphics

SpotDot Emprint Embosser

TactileView

WHAT ARE OUR PARTNERS ACROSS VIRGINIA DOING?

Keep C.A.L.M. and…

- CALM stands for the "*Choose Accessible Learning Materials Initiative*"

- Marketing/Training efforts (i.e., *swag*, videos, posters, faculty/staff trainings, etc.) focused on slowly building capacity across campus that align with WCAG standards and indirectly to UDL

- CALM Campaign Roadmap
  - FY19 – Captions & Contrast
  - FY20 – Alt text (images) & Headings
  - FY21 – Descriptive Links & Checking Accessibility

VT VIRGINIA TECH.

Targeted Training Initiatives

- ## General efforts
  - Web Accessibility training, https://www.umw.edu/web/fundamentals/
  - Guest speakers highlighting digital accessibility in higher education

- ## Faculty-focused efforts
  - Joint *UMW/VCU* mini-series on creating accessible documents
  - *Accessibility 101* course offered by Office of Disability Resources (ODR)
  - Currently developing **CANVAS course** for faculty on how to design an accessible online course

UNIVERSITY OF
MARY WASHINGTON
where great minds get to work

Raising Awareness

- JMU-sponsored conferences
  - *Diversity* Conference
  - *Technology in Education* Conference
  - *Disability Awareness* Month

- Course Content Reviews
  - *Accessible Media Group* within *ODS* offers one-on-one review of course content, DIY captioning, and to a limited extent, web accessibility

UDL/Accessibility Workshops

- ## UDL Workshops
  - *Partnership between Provost Office and the Center for Teaching Excellence (CTE)* to offer UDL workshops
    - Invited speakers
    - Integration of UDL into *Course Design Institute*

- ## Lunch & Learn Series
  - *Partnership between Provost Office and Student Disability Access Center (SDAC)* to offer UDL workshops focused on document accessibility, captioning, and resources at UVA

Accessibility Demonstrations

- Technology Demos

  - Faculty invited to meetings with students who use assistive technology to see what things "*look like*" from the student's perspective (e.g., blind students demonstrating use of JAWS with Pearson products. "*The sales reps were there and even they were blown away to see how much the students* ***couldn't*** *access!*")

NOVA
Northern Virginia Community College

ADDITIONAL STRATEGIES FOR BUILDING FACULTY BUY-IN

Go where the faculty members go…

- Faculty Senate
- Faculty Orientations (New, Adjunct, Term)
- Center for Teaching and Faculty Excellence
- Departmental Meetings
- Campus Teaching & Learning Events Conferences
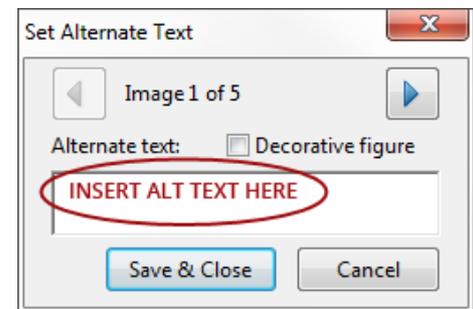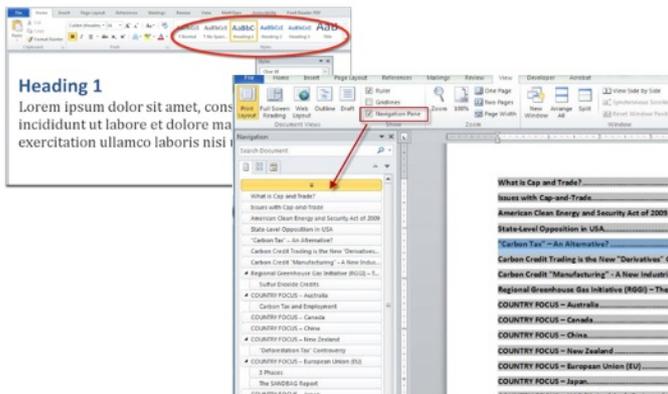- Instructional Designers
- Library

Incentivize Inclusive Design

- Annual awards (faculty, departments)
- **Promotion and tenure recognition**
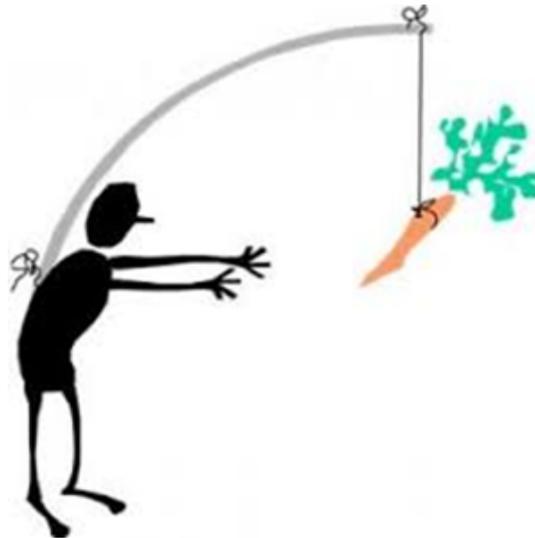
Focus on Best Practices

- **Highlight strategies that faculty can/will do** (e.g., captions, alt text for complex images, styles in Word, digitize STEM content)

Use Integrations!

- LMS Accessibility Integrations
  - Bb Ally
  - UDOIT
  - Captioning & APIs

- If possible, try to limit what you ask faculty members to do

Branding Matters Sometimes…

"We found that what we call the session sometimes helps. We recently switch from Bb to Canvas and so for a period of time, we found that if our session had Canvas in the name – i.e., *Making Your Course Materials Accessible in Canvas* – we had a good turnout."

 – NVCC DS Director

Questions

Contact Information

GMU Assistive Technology Initiative

- Location: Aquia, Rm. 238
- MSN: 6A11
- Phone: 703-993-4329
- Email: ati@gmu.edu
- Web: http://ati.gmu.edu