Assistive Technology Resource Center (ATRC)

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ATRC Services

• Direct Services to Students and CSU Employees
  • Assessments
  • Accommodations
  • Training
  • Equipment Loans
  • Resources

• Consultation

• Electronic Accessibility

• Faculty Resources
Who are college students today?
They Are Diverse

- Ethnicity & Culture
- Gender
- Nontraditional
- ELL/Native language
- Disabilities
- Learning/Cognitive Styles
Disabilities in Higher Education

- Nationally, 11.3% of undergraduates report some type of disability
- Students identifying with RDS

![Graph showing number of students identified with RDS over years](image1)

- Students identifying with ATRC

![Graph showing number of students identified with ATRC over years](image2)

2Schelly, Davies & Spooner, 2011, Journal of Postsecondary Education and Disability
Types of Disabilities

Apparent
- Mobility Impairments
- Visual Impairments / Blindness
- Hearing Impairments / Deafness

Non-apparent
- Learning Disabilities
- Attention Deficit Disorder (ADD/ADHD)
- Autism Spectrum Disorder
- Traumatic Brain Injury (TBI)
- Post Traumatic Stress Disorder (PTSD)
- Mental Illness
• Apparent disabilities

• Non-apparent

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Department of Justice (DOJ)

- Titles II and III of the Americans with Disabilities Act (ADA) apply to information and services provided through the internet.

- Colorado State University is subject to Title II, public entities, and Title III, public accommodations and services.

- July 26, 2010, DOJ indicated intent to issue a Notice of Proposed Rule Making (NPRM) to establish accessibility requirements for information offered over the Web.
Current Department of Justice Activity

• DOJ is including in settlement agreements regarding access issues requirements for website accessibility
  • Requiring compliance with Level A Success Criteria in the Web Content Accessibility Guidelines 2.0 (WCAG 2.0) issued by the World Wide Web Consortium (W3C) in December 2008

• DOJ is considering as the technical standard (1) WCAG 2.0’s Level AA Success Criteria and (2) the Electronic and Information Technology Accessibility Standards issued under Section 508 of the Rehabilitation Act of 1973

• After the final regulations are published
  • Six months for newly constructed websites and new pages on existing websites and two years for existing websites and Web pages
Ultimate Goal

- University communication and information transmitted electronically or digitally is made accessible.
- Various forms of communication via electronic and information technology include:
  - Websites
  - Course and Instructional Materials (Word documents, PDF documents, PowerPoint presentations, videos, podcasts, etc.)
  - Courseware, Software, and other Classroom Technologies
  - Content Management Systems
  - Search Engines
  - Databases
  - Registration and Grades
  - Financial and Human Resource Management Systems
  - Telecommunications
  - Emerging Technologies
CSU Approach

• Guidelines

• Universal Design For Learning Strategy

• Training for any and all individuals who create and work with websites and digital information, including faculty

• Resources on accessibility at CSU website
  • http://accessibility.colostate.edu/

• Stronger directive on its way
Universal Design

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

—Ron Mace, UD Institute
Assistive Technology is a bridge between electronic information and students.

Any kind of software that provides alternate ways of accessing electronic information.

- Text-to-Speech
- Voice Recognition
- Literacy Support Software
- Screen Reader Software

Can technology interact with the electronic content?

- Not Automatically!

Content must be designed to interact well with technology.

- This is accessibility.
Top Tips for Electronic Accessibility

• Make Scanned PDFs “Searchable”
• Use Headings & Styles to Create Structure
• Provide Descriptive Alternate Text for:
  • Images
  • Links
  • Graphs
  • Video Content
  • Audio Content (Transcript or Captions)
• Check Reading Order
Chris – Non-Apparent Disability

• Profile
  • Undeclared major – Sophomore
  • Student with a diagnosis of Dyslexia and ADD

• Challenges he experiences in accessing coursework
  • Note taking – slow and laborious
  • Written work – slow with handwriting and typing; loses train of thought
  • Print books and handouts – unable to read efficiently due to dyslexia
  • Poor quality PDF – small, faint and crowded font is hard to read
  • Difficulty proof-reading his own work; dependent on family members
AT Chris Used to Access Coursework

- **Read and Write Gold** – literacy software
  - See and hear content simultaneously – digital books and content (text to speech)
  - Manipulate the display (background and highlight color)
  - Electronic highlighting and annotations
  - OCR and read PDF

- **Dragon Naturally Speaking** – voice recognition software
  - Allows him to get ideas on paper using his voice

- **Live Scribe Pen**
  - Synchronous written and audio notes for capturing lectures
Course Solutions for Chris

• Giving notes ahead of time – lets him print out content on special Livescribe paper

• Handouts in digital formats – lets him use text to speech software

• Universally designed PDF – lets him read and create annotations with Read and Write Gold or other text to speech software
What is OCR?

- Stands for “Optical Character Recognition.”
- Software that takes an image, finds the text, and converts it to computer-recognized text.
- Creates a document with text that is:
  - Selectable
  - Searchable
  - Text-to-Speech Capable
  - More Usable for Everyone
Demo PDF

- Search
- Highlight, Copy, Paste
- Text-to-Speech
- OCR
Scanning to PDF

• OCR at the Scanner or Copier
  • Look for “Searchable PDF” or “OCR” options before saving.

• Morgan Library Course Reserves (http://lib.colostate.edu/)
  • Requested articles are OCR’d for you and posted online for your entire class.
  • Click on the “Reserves” tab on the Library Homepage and login as an instructor using your eid.

• DIY: OCR with Adobe Acrobat Professional
Hands-On: OCR with Adobe Acrobat Pro

1. Use the “Recognize Text” Tool

2. Add Tags Using the Accessibility Tool

3. Save Changes
Nate - Apparent Disability

• Profile:
  • Student who is legally blind
  • Computer Science major; Junior
  • Considered a power user of assistive technologies

• Barriers he experiences in accessing coursework
  • Print textbooks
  • Print handouts and study guides
  • PDF’s that are image only
  • Visual graphics and formulas
AT Nate Used to Access Coursework

- Screen reading software
  - Jaws; VoiceOver
- Braille translation software for embossing
- Refreshable Braille
- Tactile graphics
- Tiger pro graphics with Braille
- Daisy book player - Stream
Course Solutions for Nate

• Course content in digital formats —
  • Allows for access with Braille or screen reading software
  • Needs lecture content in digital format and ideally ahead of time — allows him to use refreshable Braille or to emboss content

• Universally designed course materials
  • PDF – has to be OCR’ed
  • Word documents – created with Styles
  • PPT presentations to be made accessible, e.g. labeling of images
  • Web content
  • Video – descriptive audio

• Needs content uploaded into Blackboard to be accessible (Word docs, PowerPoint, PDFs)
Demo Word with Screen Reader

- Navigating with headings, lists
- Images with alt text
How to Write Descriptive Alt Text

• Avoid redundant descriptions (e.g. “Image of”).
• Avoid repeating text surrounding the image.
• Be concise.
• Consider context.

Ask yourself...

• What is the purpose of this image?
• If the image were removed, how would I convey the information using text?
Context is Key

- Alternative text for images should describe the meaning of the image in its context

- Ice Cream Manufacturer
- Girl Scouts of America
- My Niece's Blog
- Diversity Website

Source: Jesse Hausler, ATRC & The ACCESS Project
Learning Styles

VARK is an identified variety of learning styles: Visual, Aural, Read/Write, and Kinesthetic.

Many learners identify strongly with one of these styles, and approximately 60% learn best with a combination of styles (Multimodal).

Source: VARK (http://www.vark-learn.com)
Hands-On: Top Tips for Word Documents

• Use Headings
  • Indicate Level of Importance
  • Don’t Skip Heading Levels
  • Check Your Table of Contents in the Navigation Pane

• Choose a Style

• Provide Alternate Text for Images
  • Make Sure Image is “In-Line with Text”
  • Right-Click on Image to Format Picture
Hands-On: Top Tips for PowerPoint

- Use Slide Layouts (Styles)
- Every Slide Needs a Unique Title
  - Generates Table of Contents
  - Check Your Outline View
- Add Alternate Text for Images
  - Right-click to Format Picture
- Check the Reading Order of Each Slide
  - Items are read from bottom-to-top
Hands-On: Top Tips for Converting to PDF

• Start with an Accessible Source Document

• “Enable Accessibility and Reflow with Tagged Adobe PDF”
  • In Acrobat Plugin Preferences

• Use “Save As PDF” or “Create PDF”
  • Avoid Printing to Adobe PDF in the Printers List!
Demo PDF Reading Order
Hands-On: Fixing Converted PDFs

- Set the Document Language
- Check Keyboard Tab Order
- Check “Tags” for Correct Reading Order
  - Images will be out of order
Questions? Need Help?

Online Tutorials and Resources
ATRC’s Accessibility By Design Website
http://accessibility.colostate.edu
CSU’s Access Project (Step-by-Step Tutorials)
http://accessproject.colostate.edu/udl

Information on ATRC Services
http://www.atrc.colostate.edu

For More Direct Help
Allison.Kidd@ColoState.Edu