

The logo for Access Computing features the text "Access Computing" in a sans-serif font. "Access" is in a teal color, and "Computing" is in a dark blue color. A thick, dark blue curved line starts under the "A" and sweeps under the "g", ending under the "g".

Access Computing

Captioning and Accessible Multimedia

CALWAC 2009

**Terrill Thompson
University of Washington
tft@washington.edu**

Agenda

- Defining Terms
- Overview of Multimedia Accessibility
- Accessibility of Media Players
- Captioning
- Audio Description
- Sign Language
- Discussion and Promising Practices

Video:

Inaccessible to whom?

- People who are unable to hear the audio
- People who are unable to hear the audio *or* read the captions
- People who are unable to see
- People who are unable to operate the player controls
- People with slow Internet connections
- Search engines

Accessibility Solutions

- People who are unable to hear the audio
 - Captions
- People who are unable to hear the audio *or* read the captions
 - Sign language
 - Transcript
- People who are unable to see
 - Audio description

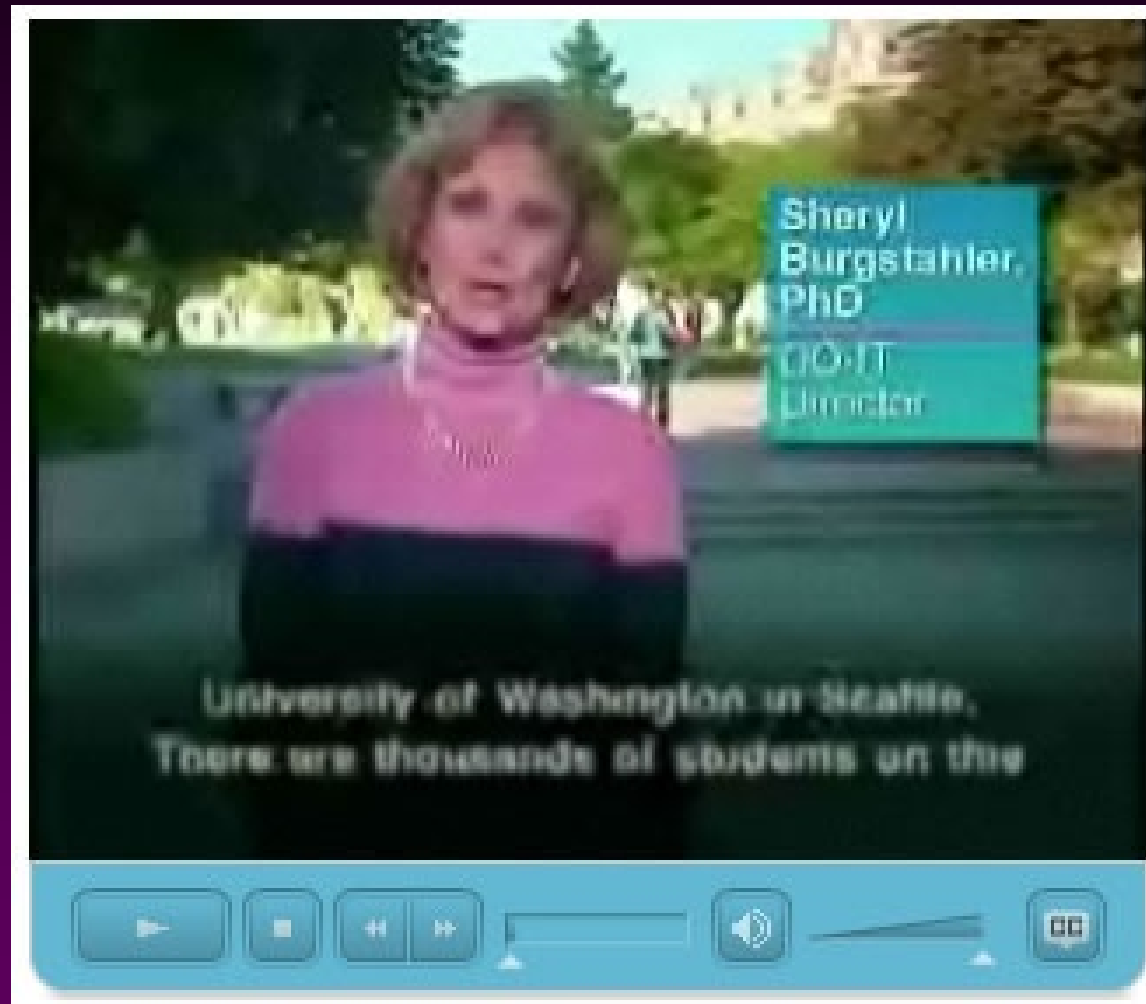
More Accessibility Solutions

- People who are unable to operate the player controls
 - Choose players wisely
 - Test with a keyboard
 - Test with a screen reader
- People with slow Internet connections
 - Transcript
- Search engines
 - Captions

Captions 101

- Captions provide a text equivalent for any audio content within a multimedia presentation. This makes the presentation accessible to someone who is unable to hear the audio.
- Open captions are integrated into the video stream, and can not be turned off. Result is one file: Easier to distribute.
- Closed captions exist in a separate track, and can be turned on or off. Result is searchable. Distribution typically requires multiple files.

Open Captions and Modems



The Closed Captioning Process

- Create a transcript
- Divide the transcript into caption-sized segments
- Use a captioning tool to timestamp the caption-sized segments
- Save to an output file that is appropriate for your media type

Flavors of Closed Captions

- Quicktime – SMIL, with captions in qt.txt
- Real – SMIL, with captions in rt.txt
- Windows – SAMI
- YouTube - SubRip
- W3C Timed Text - Distribution Format Exchange Profile (DFXP)

Example SubRip File (for YouTube)

00:00:10.376

[Sheryl] Hi, I'm Sheryl Burgstahler, director of the DO-IT programs

00:00:14.116

at the University of Washington in Seattle.

00:00:17.036

There are thousands of students on this campus, and some of them have disabilities

00:00:21.376

that at one time would have blocked them from academic achievement.

00:00:25.176

Attitudes have changed, career

00:00:26.976

and school opportunities have changed, even the law has changed.

00:00:31.196

What hasn't changed is that all students need academic and career skills, self-confidence,

Example W3C Timed Text file

```
<?xml version="1.0" encoding="UTF-8"?>
<tt xml:lang="en" xmlns="http://www.w3.org/2006/04/ttaf1" xmlns:tts="http://www.w3.org/2006/04/tts"
<head>
  <styling>
    <style id="1" tts:textAlign="center" tts:color="#FFFFFF" tts:backgroundColor="black" />
  </styling>
</head>
<body>
  <div xml:lang="en" style="1">
    <p begin="00:00:10.37" dur="00:00:03.74">[Sheryl] Hi, I'm Sheryl Burgstahler
    <p begin="00:00:14.11" dur="00:00:02.92">at the University of Washington in
    <p begin="00:00:17.03" dur="00:00:04.34">There are thousands of students on
    <p begin="00:00:21.37" dur="00:00:03.80">that at one time would have blocked
    <p begin="00:00:25.17" dur="00:00:01.80">Attitudes have changed, career</p>
    <p begin="00:00:26.97" dur="00:00:04.22">and school opportunities have<br/>c
    <p begin="00:00:31.19" dur="00:00:05.98">What hasn't changed is that all stu
    <p begin="00:00:37.17" dur="00:00:02.69">self-advocacy skills, and determina
    <p begin="00:00:39.86" dur="00:00:04.52">[Sheryl] Since 1992, DO-IT<br/>has
    <p begin="00:00:44.38" dur="00:00:04.51">proven practices to help students w
    <p begin="00:00:48.89" dur="00:00:03.23">Now we'd like to share with you<br/
    <p begin="00:00:52.12" dur="00:00:07.75">We'll show you what we do and how w
    <p begin="00:01:14.07" dur="00:00:03.00">[Sheryl] Through our DO-IT Scholars
```

Captioning Tools

- MAGpie
<http://ncam.wgbh.org/webaccess/magpie>
- HiCaption
<http://www.hisoftware.com/hmcc>
- Captionate (for Flash)
<http://www.buraks.com/captionate>
- AutomaticSync
<http://www.automaticsync.com>

Playing Captioned Videos

- To play captioned Quicktime and Real videos, play the .smil file
- To play captioned Windows Media videos, play the original media (e.g., .wmv file).
 - The SAMI file must be in the same folder OR
 - Point to the SAMI in a reference file (see next slide)
- To play captioned Flash videos, click the CC or similar button

Sample Windows Media Reference File (doit.asx)

```
<asx version="3.0">  
  <entry>  
    <ref href="mms://doit.wmv?  
      sami=doit.sami" />  
  </entry>  
</asx>
```

Can speech recognition help?

- Lecturers can use speech recognition
- Transcribers can use speech recognition
- AutomaticSync uses speech recognition to produce captions from a transcript
- Speech recognition *can not* yet produce a reliable transcript of untrained speakers

Closed Captions & Video Search

- [Google Audio Indexing \(GAUDI\)](#)
- [MIT Lecture Browser](#)
- [Everyzing.com](#)
- [DO-IT Video Search](#)

DO-IT Video Search



[Skip to search results](#) [Preferences](#) [FAQ](#) [Help](#)

DO-IT Video Search Results **BETA**

Search the full text of DO-IT's video library:

Your Search Results

We found **50** captions in **36** videos matching your search terms. Select any video title to go to the home page for that video. Click on any timestamp to view the video starting at that time.

Self-examination:
*How Accessible is
Your Campus?*



[Self-Examination: Is Your Campus Accessible? \(2007\)](#)

Relevance Rating: 6

Guidelines for making a postsecondary institution welcoming and accessible to everyone..

Matching captions from this video:

Audio Description 101

- Audio description, video description, descriptive video, descriptive narration, described video (synonyms)
- A separate narrative track, for people who can't see critical visual content
- Can be avoided by assuring that all important information is communicated visually *and* audibly
- If needed, recording narrative segments can be synchronized with video using multimedia editing or captioning software

The Audio Description Process

- Avoid the need for audio description where possible, by assuring that all important information is communicated visually *and* audibly
- Carefully script audio description:
 - Choose words carefully so as not to distort the message
 - Find suitable moments for inserting audio (avoid conflicts with existing dialog or important sounds)
- Record audio description segments
- Synch audio description with video using media synchronization software (e.g., MAGpie)

Closed Audio Description



Sign Language & Video?

- WCAG 2.0 SC 1.2.6 Sign Language (Prerecorded): Sign language interpretation is provided for all prerecorded audio content in synchronized media. (Level AAA)

Flash Media Players

- Nearly ubiquitous (~99% of desktops)
- Highly customizable
- Players are available that:
 - Support closed captions
 - Support closed audio description
 - Support a start time parameter
 - Are screen-reader accessible
 - Are keyboard-accessible (in Internet Explorer)

Example Flash Media Players

- NCAM ccPlayer
- Adobe CS4
- JW FLV Player

How to Make Video Accessible when \$ is Tight

- Empower the infrastructure
 - Who creates multimedia?
 - Who provides streaming services?
 - Who offers relevant training and support?
 - Utilize student help

How to Make Video Accessible when \$ is *Still* Tight

- Document a procedure. Identify responsible parties.
- Collaborate. Negotiation bulk pricing for transcribing and/or captioning services
- Include accessibility in high-level digital media discussions