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USM Accessible Technology and Information Workgroup Report

At its meeting on April 24, 2015, the Maryland Association on Higher Education and Disability (MD AHEAD) focused on accessible information and technology, as well as assistive technology. A large majority of Maryland 4-year and 2-year postsecondary institutions had Disability Support Services representatives there. National Federation of the Blind President, Mark Riccobono, gave the keynote address, and the USM Accessible Information and Technology Workgroup provided an update on the work being done by USM institutions to address electronic accessibility for individuals with disabilities. At the meeting, the community colleges expressed an interest in joining in the USM efforts.

Background
This report follows the previous USM Compliance Memo written last year by Dr. Allison Butler, former Director of the Office of Accessibility Services at UMUC and former MD AHEAD President. That memo called on USM institutions to take a more proactive approach to addressing technology and information accessibility and reviewed pertinent laws (e.g., Section 504 of the Rehabilitation Act, Americans with Disabilities Act), U.S. Department of Education Office for Civil Rights (OCR) and Department of Justice (DOJ) agreements and settlements, and higher education court cases. Importantly, the idea of providing an accommodation in lieu of taking serious steps to provide equally effective technologies is no longer be acceptable and may result in a lawsuit or complaint by a student with a disability.

The above compliance memo was written following a May 2014 MD AHEAD meeting. The purpose of the meeting was to discuss how Maryland’s postsecondary institutions could collaborate on efforts to make technology and information more accessible to students with disabilities at our respective campuses. Bill Welsh was invited to speak about his experiences in creating accessible technology and information both at Penn State, following a settlement with the National Federation of the Blind, and more recently at Rutgers as part of accessible technology and information efforts on the part of the “Big Ten.”

At this meeting, disability services representatives from 2-year and 4-year postsecondary institutions throughout Maryland were asked to participate in a “Rate Your Institution Game,” which asked the following 20 questions as a starting point for planning future accessibility efforts.

Policy Questions
1. Our administration is supportive of accessible technology and information?
2. We have a policy on web accessibility?
3. We have a policy or best practices for accessible online courses?
4. We have a policy for captioned videos?
5. We have a policy on accessible course materials?
6. We have a policy on procurement or purchase of accessible technology?

Tools and Resources Questions
7. We provide regular trainings on accessible technology and information for faculty, staff and administrators?
8. We send our IT staff, web developers and instructional designers to accessibility trainings and conferences?
9. We have online training resources for accessible technology and information?
10. We provide a course or training for faculty on accessible course materials and course technologies?
11. We have a university-wide or unit-by-unit budget for captioning videos?

Planning and Assessment
12. We have a committee on accessible technology and information?
13. We scan and assess our web sites for accessibility regularly using an audit tool?
14. We have a university-wide plan to accomplish web accessibility?
15. We ask for regular reports on web accessibility from our units?
16. We assess our library materials, databases, and search engines for accessibility?
17. We have a plan to integrate accessibility into our procurement process and practices?
18. We assess our technology to include accessibility for university-wide purchases (e.g., email systems, calendar systems, learning management systems)?
19. We have assessed our classroom technologies for accessibility (for online learning, this would be your course or learning management system and third party tools)?
20. We have assessed our email and calendar systems for accessibility?

USM institutions who participated and now comprise the USM Accessible Information and Technology Workgroup include:

- Frostburg State University
- Towson University
- UMB
- UMBC
- UMD
- UMUC
- University of Baltimore

In comparing the results of the “Game” at our respective institutions we found that there was significant discrepancy in how far along our various institutions were in implementing policies/guidelines and practices in accessible technology and information. We also found a serious commitment to working together to pool resources and share information as institutions within the USM. Subsequently, the USM Accessible Information and Technology Workgroup was formed.

USM Accessible Information and Technology Workgroup

Our vision: To promote a culture of equal access regarding information and technology accessibility within the USM institutions that results in all-inclusive learning and working environments.
Our mission: To assist the USM institutions in actualizing this vision by developing useable policies and/or guidelines for information and technology accessibility, and recommending strategies, tools and resources that will lead to enhanced accessibility.

Basic Premise: To utilize strategies that will stimulate collaboration on the USM campuses to affect changes that will ultimately benefit all. An accessible information technology environment enhances usability for everyone.

Our Purpose
In today’s ever increasing technological environment, postsecondary institutions are experiencing a huge increase in the incorporation of technology in virtually all aspects of instructional and administrative services. As a result of this increase in technology, individuals with disabilities are faced with a broad range of accessibility issues that prevent them from fully participating in postsecondary programs and courses. As Maryland’s public system of higher education, it is critical that USM institutions continue to move forward in removing barriers and facilitating accessible technology and information. Our workgroup’s ultimate goal is to ensure that each campus strategically plans and manages its ability to deliver technologically enhanced services and products in ways that are accessible to all.

While awareness and implementation of accessibility requirements is growing at USM institutions, as the “Rate Your Institution Game” demonstrated, there is marked variability. Addressing the information and technology barriers of today is similar to the task of addressing the architectural barriers of the past. It is a task of large scope. Rather than attempting to address it in isolation on a campus-by-campus basis, the structure of the USM lends itself very well to tackling it together as a larger collaborative project, much like the University of California system has done.

In addition to collaboration within the USM, collaboration is needed on each campus among those who are responsible for creating websites, designing and teaching courses with an online component, purchasing technology, creating or using multimedia, and providing library resources. With the cooperation and participation of the USM campuses, information and technology accessibility can be infused in the USM campus culture.

A first step would be to establish functional accessibility work groups at each USM institution. These work groups would include a diverse membership of various stakeholders across the campuses with a focus on implementation of information and technology accessibility, including information technology specialists, web developers, instructional designers, library staff, ADA coordinators, disability service providers, assistive technology specialists, public relations and communications staff, deans, department directors, faculty, and learning management system representatives.

Guidelines
The USM Information and Technology Workgroup has been working on phase one of policies/guidelines and best practices since meeting with representatives of the USM Office of the Chancellor and USM Office of Academic Innovation in January 2015. The proposed guidelines and best practices are intended to help further advance USM institutions’ commitment to accessibility for all. They are also an
attempt to lay the groundwork for a more consolidated, system-wide approach to help individual USM institutions tackle and achieve this large agenda.

This document briefly addresses areas where we could focus our efforts, including: web accessibility, accessibility of course materials and online courses, captioning, procurement, and library information accessibility.

Definitions
Accessible: Refers to the concept that individuals with disabilities are able to access and use a product or system, including with the help of assistive technologies. For example, an accessible website can be designed so that the text can be enlarged by the user (rather than having a fixed font size), or designed so that it can read aloud by screen-reading software, or designed to be compatible with voice recognition software.

Accessible Information Technology: Information technology that has been designed, developed, or procured to be usable by, and therefore accessible to, people with disabilities, including those who use assistive technologies. This includes computer hardware and software, websites, multimedia, telecommunication products, and stand-alone products such as printers and information kiosks.

Assistive Technology: Adaptive, rehabilitative devices that promote greater independence for individuals with disabilities by enabling these individuals to interact with technology. Examples include screen-reading software (e.g., Kurzweil), voice-recognition/writing software (e.g., Dragon), screen magnifiers, and special input devices (e.g., head or foot mouse, puff-and-sip switches).

Web Accessibility
As Maryland’s public system of higher education, it is imperative that the website content at USM institutions be accessible to people with disabilities, including those who use assistive technologies. Navigating websites can be difficult or possible for people with disabilities. Many individuals with disabilities need specialized hardware and software (i.e., assistive technology) to use computers and technology. For example, blind individuals typically use screen readers that translate content from a computer or other technology into speech or Braille. Only accessible websites will work properly with assistive technology.

There are many settlement agreements and court cases involving inaccessible university websites. Of note, two more recent cases (2014) involving university websites reached similar settlement agreements with the Department of Education Office for Civil Rights (OCR) when they were found in violation of Section 504 and the ADA due to their inaccessible websites. In both settlement agreements, the universities agreed to several steps, including developing a web accessibility policy and accompanying implementation and remediation plan; providing training to staff; and reviewing their websites on an on-going basis. (University of Cincinnati and Youngstown State University)
General principles and best practices for website accessibility include:

- Remember that accessibility and design are complementary.
- Practice user centric design.
- Separate style from content when possible.
- Organize sites for consistency and clarity.
- Test sites.
- Write concisely and clearly.
- Don’t rely on alternative, text-only sites.

Guidelines
In order to ensure accessibility within all USM websites, web accessibility guidelines should be adhered to on each campus. These guidelines should facilitate website accessibility in the areas of development, auditing, correcting, and monitoring.

General web standards include the World Wide Web Consortium (W3C) which summarizes web accessibility in its Web Content Accessibility Guidelines 2.0 (WCAG). In general, it is recommended that USM institutions adhere to WCAG 2.0 standards for web-based products/services. WCAG 2.0 is organized into the following four key concepts:

- **Web content must be perceivable.**
  - Provide text alternatives for non-text content.
  - Provide captions and other alternatives for multimedia.
  - Create content that can be presented in different ways, including by assistive technologies, without losing meaning.
  - Make it easier for users to see and hear content.

- **Web content must be operable.**
  - Make all functionality available from a keyboard.
  - Give users enough time to read and use content.
  - Do not use content that may cause seizures.
  - Help users avoid and correct mistakes.

- **Web content must be understandable.**
  - Make text readable and understandable.
  - Make content appear and operate in predictable ways.
  - Help users avoid and correct mistakes.

- **Web content must be robust.**
  - Maximize compatibility with current and future user tools.

Although written specifically for web content, these principles apply to other technologies as well.

Enterprise Tool
An enterprise tool should be used to ensure that accessibility standards are met. Each USM institution should have access to a website accessibility enterprise tool that is capable of scanning current websites for accessibility errors, being programmed to conduct regularly-scheduled scans, and being utilized to evaluate any new content added to campus websites.
The necessary training and information should be provided to faculty and staff who develop or post content on websites so they can effectively use automated tools to scan, repair and replace website content to ensure accessibility. Accessibility audits should then be conducted on an on-going basis. After an initial audit, an individualized campus correction action plan should be developed that identifies the supports needed to address inaccessible websites.

**General Web Accessibility Recommendations**

- New and updated administrative websites, web applications and web content produced by USM institutions or by third-party developers should, at a minimum, conform to baseline accessibility standards as defined in WCAG 2.0 AA standards.
- Regarding third-party websites, if remediation or replacement of the website is not possible or would constitute an undue burden, a plan to provide an equally effective alternate form of access should be developed and implemented.
- Each USM institution should identify the responsible party for enforcing and monitoring the web accessibility process.

**Accessibility of Course Materials and Online Courses**

USM institutions must ensure that course materials are accessible. Recent Department of Justice (DOJ) and OCR settlement agreements provide post-secondary institutions with a clear standard. In settling a 2013 complaint regarding inaccessible course materials at Louisiana Tech University the DOJ stated:

“...the University must implement a policy that requires the deployment of accessible technology and course content in the University setting. To that end, the university shall conduct a review of the accessibility of its technology and instructional materials and shall ensure that ... all technology, including websites, instructional materials and online courses, and other electronic and information technology for use by students or prospective students, is accessible.” (Louisiana Tech University Department of Justice Settlement Agreement, Paragraph 13(a)).

The DOJ and OCR have clarified the standard for “accessible” to mean that “a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use. The person with a disability must be able to obtain the information as fully, equally and independently as a person without a disability. Although this might not result in identical ease of use compared to that of persons without disabilities, it still must ensure equal opportunity to the educational benefits and opportunities afforded by the technology and equal treatment in the use of such technology.” This clarification is a game changer because it means that students with disabilities should be provided with integrated accessible technology and information whenever possible rather than being provided with separate, individual accommodations upon request. (Resolution Agreement South Carolina Technical College System OCR Compliance Review No. 11-11-6002)
Another recent OCR settlement agreement has noted that students with print disabilities too often still struggle for access to standard hard copy print in textbooks, course readers, and library research materials in the alternate format they need (e.g., digital text, Braille, large print, or audio). The agreement implemented a comprehensive approach for rapidly converting into an accessible format course textbooks (within 10 days) and course readers (within 17 days), including requiring faculty to submit their reading lists 7 weeks before the start of the semester or face possible sanctions for failure to do so. (University of California, Berkeley, 2013)

Notably, the burgeoning trend toward using open educational resources for course material will directly impact higher education’s ability to deliver alternate formats in a timely manner.

Additionally, learning management systems, classroom technologies including podiums and displays, as well as clickers, should be accessible. (2013 Penn State settlement agreement)

**Online Courses**
Ensuring that online courses are accessible to all students poses unique challenges. Given the scope of this requirement, accessibility of online education must start with forethought in course design rather than an afterthought when a student encounters an accessibility barrier. Therefore, USM institutions should incorporate accessibility in web-based courses from inception through implementation, which will require a shift in thinking to designing online courses with accessibility in mind. While delivering accessible online courses and content will involve up-front planning, effort and resources, these variables will be offset by a reduction or elimination of the time and expense of providing accommodations. Importantly, incorporating accessibility during the design and building of online courses is typically less resource intensive than retrofitting an existing online course.

**Best Practices**
Members of the USM Accessible Information and Technology Workgroup have developed a best practices resource for developing online course materials entitled, *Improving Access: Best Practices for Developing Course Materials with an Online Component*. The document includes a checklist of practices for communicating with students about accessibility, addressing and accommodating differences, and designing an effective course layout and visual design.

The resource is based on the fifth edition of the Quality Matters (QM) Rubric*, used in a collegial process for promoting quality in online/blended courses, which includes the following five key standards* in online course accessibility:

- Course instructions articulate or link to the institution’s accessibility policies and services (QM Standard 7.2).
- Course navigation facilitates ease of use (QM Standard 8.1).
- Information is provided about the accessibility of all technologies required in the course (QM Standard 8.2).
- The course provides alternative means of access to course materials in formats that meet the needs of diverse learners (QM Standard 8.3).
- The course design accommodates readability (QM Standards 8.4).

* © 2014 Maryland Online, Inc. All rights reserved. Used with permission.
As beginning steps to introduce how to create accessible online course content to faculty, course developers, etc., USM institutions could consider the following:

- Develop an accessible syllabus template and train faculty in how to implement it in their courses.
- Provide faculty and staff awareness and training of common course format barriers and accessible alternatives to remedy them as shown below:

<table>
<thead>
<tr>
<th>Format</th>
<th>Barrier</th>
<th>Accessible Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed text</td>
<td>Incompatible with screen readers used by blind/low vision students &amp; students with learning disabilities (LD)</td>
<td>Supplement with audio; provide an electronic copy of text</td>
</tr>
<tr>
<td>Audio</td>
<td>Hearing impaired students may not hear it; students with LD (auditory processing) may have difficulty understanding it</td>
<td>Supplement with printed text</td>
</tr>
<tr>
<td>Video</td>
<td>Blind/low vision students may not see it; hearing impaired students may not hear it; students with LD (auditory processing) may have difficulty understanding it</td>
<td>Provide description, captions or written transcript</td>
</tr>
<tr>
<td>Picture</td>
<td>Blind/low vision students may not see it</td>
<td>Add description</td>
</tr>
<tr>
<td>Synchronous discussion</td>
<td>Blind/low vision students, students with LD &amp; ADHD, students with medical/physical &amp; psychological disabilities may have difficulty following &amp; keeping up</td>
<td>Use asynchronous format for all or some discussions to allow more time for processing &amp; responding</td>
</tr>
<tr>
<td>Tests/Quizzes</td>
<td>Many students with disabilities have slower processing speed that impacts performance (e.g., LD and ADHD, medical/physical &amp; psychological, blind/low vision, hearing impaired)</td>
<td>Provide extended time; Supplement with audio; Provide large text size option</td>
</tr>
</tbody>
</table>

**General Online Course Accessibility Recommendations**

It is recommended that USM institutions implement best practices for creating courses with an online component. The best practices resource developed by members of the USM Accessible Information and Technology Workgroup can be found in the appendix of this paper. The next step would be for the USM institutions to vet the document for potential adoption as a system-wide best practices resource.
Captioning Accessibility

Current media usage, both in the classroom and on the web, often present barriers to persons with disabilities. As more web and classroom content includes video and audio components at USM institutions, there is an increasing need for captioning, as well as descriptive audio. Under the ADA, captioning and audio description are necessary and required to make audio and audiovisual media accessible. Descriptive audio, also referred to as video description, is an additional narrative track intended primarily for persons who are blind or have low vision who are using visual media. It consists of a narrator talking through the presentation, describing what is happening on the screen during natural pauses in the audio. The American Council of the Blind maintains a list of audio description service vendors at: http://www.acb.org/adp/services.html.

The demand for captioning far exceeds the need for audio description at USM institutions. Captioning enables a deaf or hard-of-hearing person to view a presentation and read what is being said simultaneously. Captioning is also beneficial for students with learning disabilities and ADHD, as well as for students whose primary language is not English.

Notably, earlier this year, MIT and Harvard University were sued by the National Association of the Deaf and DOJ for failing to provide adequate captioning for their online educational videos (including captioning of good quality).

Captioning Accessibility Guidelines
All USM institutions should have a campus-wide captioned media policy and/or guidelines. Recognizing the challenge of captioning all video content, the following set of guidelines is an example of what campuses could use to prioritize audio-visual and audio media for captioning.

1. Captioning Required:
Captioning should be required for the following types of media:

- Media used for instructional purposes for a student enrolled at the University who is deaf or hard of hearing and registered with Disability Support Services
- Media used to orient, publicize, promote or explain the University and its services that is intended to reach the general public (e.g., Admissions, Orientation, University Advancement, etc.)
- Media intended to reach the general public that is linked to the University website.

2. Captioning Encouraged:
Captioning is strongly encouraged for all online audio and audiovisual media that will be used in the future for an open audience. For example, if a video is used regularly to teach a class, there is an increased likelihood that a student in the future will need it captioned.

3. Captioning Not Required:
Captioning need not be required for media that will be used for a limited duration when the audience is consistently restricted to a group of users who are known not to need captioning. For
example, if access is restricted by some means such as Moodle, and it is known that no one in the class needs it, captioning is not necessary.

Below is an example of another type of captioning policy (proposed at UMD):

Proposed Captioned Media Policy:

All media resources purchased, procured, and/or used after (enter date) at the University of Maryland must be captioned. All new instructional, informational, marketing, and promotional audio and visual materials produced by the University of Maryland, including content posted on websites, will be produced with captions.

Implementation Guidelines:

New Media:
It is the responsibility of the unit/department, administrators, faculty and staff to always:
• Use accessible media in the classroom
• Use accessible media during open events sponsored by the University
• Purchase accessible media
• Produce accessible media (for general distribution)

Existing Non-Captioned Media:
It is the responsibility of the unit/department, administrators, faculty and staff to:
• Convert media materials into accessible products when requested by a person with a disability or when the media is to be used in a campus-sponsored open event.
• Determine if material is under copyright and request copyright holder’s permission to caption content
• Obtain alternate accessible media when it is not possible to convert the original choice
• Determine if the chosen media is essential to the course or may be removed from the course content in the event that it is not possible to convert the media or an alternative product is not available.

Enforcement:

To ensure the success of a campus captioned media policy, enforcement guidelines should be determined.

Campus individuals or units not in compliance with the Captioned Media Policy will be reported to the unit/department head as well as the DSS Director/ADA Compliance officer.

Responsibilities:

Individual department/unit is financially responsible for:
• Ensuring material on respective websites is captioned either internally or through Captioning Vendor Master Contract
• Creating an internal captioning process
• Designating a department captioning representative to manage internal process
• Making currently used classroom/promotional materials accessible
• Purchasing accessible material to comply with campus procurement guidelines
• Obtaining copyright permission(s) for existing material when necessary

Disability Support Services:
• Serves as resource of information regarding captioning options

Recommendations for the campus:
• Designate a staff member from each department to be familiar with the captioning process and attend trainings
• Develop campus captioning committee with campus-wide departmental representation
• Provide training sessions (by captioning vendor)
• Describe procedures to request captioning
• Describe what file type options are available for submission and output
• Discuss how to embed captions in-house to reduce costs
• Discuss how to obtain copyright permissions
• Provide “Best Practices for Accessible Media”
• Create centralized funding for captioning cost

To produce captions and transcripts the work is usually outsourced. Verb8tm, which began on the Towson University campus, will provide captioning and transcription services at discounted rates for the USM. CaptionsSync, with whom the USM has a contract, also provides these services. Alternatively, there are free tools available on line that enable captioning, but it is important to ensure that the captioning is accurate when utilizing this option.

General Captioning Recommendations
Adopt a proactive approach for captioning course videos that encourages faculty to caption media even without identified students requiring captioning.

Review campus web sites for video content that should be captioned, prioritize it for captioning and take action to caption it.

Provide awareness and training to the campus community about captioning requirements, the options (e.g., providing a transcript) and available resources to support captioning.

Given the scope of captioning needs at all institutions, a fund should be established at the institution or USM level to help ensure that captioning requirements are met.

Procuring Accessible Information Technology:
To ensure the accessibility of instructional material and technology used by USM institutions, those responsible for making decisions about which products to procure should consider accessibility as one criterion for acquisition. This is particularly important for enterprise-level systems or technologies that impact a large number of students, faculty, and staff. To consider accessibility in procurement, those making procurement decisions at USM institutions should ask vendors to provide information about the accessibility of their products that is valid and measured using a method that is reliable and objective. Those making procurement decisions should be able to objectively evaluate the accessibility of products and to scrutinize information provided by vendors.

Information Technology
When procuring information technology, USM institutions should acquire products that comply with applicable WCAG 2.0AA provisions when such products are available in the commercial marketplace. Each USM institution should establish a commitment to make accessibility a significant factor in procurement. When a product that best matches campus needs does not meet the requirements, the company should be provided with an option to commit to adding the missing features within two years of the university’s procuring the product. It is recommended that campus procurement directors discuss among themselves ways to motivate vendors to adhere to accessibility standards within the two-year window.

Procuring Multi-media
It is recommended that all future media resources purchased at each USM institution should include captions. If it is determined that no captioned version exists, a plan should be made to caption the material, as needed. If the media cannot be captioned, an alternate accessible version, such as a transcript should be provided.

General Procurement Recommendations
• USM institutions should use the Voluntary Product Accessibility Template (VPAT) as a tool to assess a product’s compliance with the accessibility standards. The purpose of the VPAT is to assist technology buyers in making decisions regarding the accessibility of commercial products. Vendors are responsible for documenting the accessibility of their products. The official VPAT forms are hosted by the Information Technology Industrial Council and are available in the Microsoft Word format.

• In addition to using the VPAT, those responsible for making procurement decisions at USM institutions should ask vendors specific questions about the product or service. These questions could be formatted into a matrix with scores to help technology buyers determine a product’s overall suitability, such as:
  o Has the product been tested by disability users? If so, what disability groups?
  o What are the accessibility criteria used for testing the product? Do they meet WCAG or Section 508 standards?
  o Who will maintain the product for compliance?
  o What is the system used to report and address accessibility problems to the company? What is the company’s timeframe to review these reports and make changes to fix the reported accessibility problem?
• Are there other companies/agencies who have procured this same product, and can they be used as a reference?
• If the product is software, does it require a mouse? If the answer is no, the vendor could be asked to detach the mouse and demonstrate using only the keyboard.

• Adopt a USM procurement statement that demonstrates a commitment to procuring accessible technology, such as:

“The USM is committed to developing and procuring web-based technologies that meet the WCAG 2 AA standard. When accessibility is unavailable in a product, the USM institution will work with the vendor to establish a public commitment to accessibility at the WCAG 2 AA level by a date within two years of the notification. If the company will not commit o adhering in that window, the USM institution will consider the next possible product that achieves the standard or commits to it on a public roadmap within two years.”

• It is recommended that institution IT operating funds be allocated to allow for the potentially higher cost of accessible products that meet this higher standard.

Library Information Accessibility

USM libraries must be accessible to individuals with disabilities. As stated by the American Library Association’s (ALA) Library Services for People with Disabilities Policy, “Libraries must not discriminate against individuals with disabilities and shall ensure that individuals with disabilities have equal access to library resources.” This policy includes “remote electronic access to library resources.”

Library electronic and information resources, including library websites, online catalogs, electronic books, indexes to literature, full-text journal articles and electronic reserve services should be accessible to individuals with disabilities, including those who use assistive technology such as screen readers. It is recommended that each USM library designate a librarian or committee to coordinate services for patrons with disabilities, monitor assistive technology and respond to requests for accommodation.

Librarians should be prepared to assist patrons with electronic resources that they cannot access by providing research consultations or materials in alternate formats as needed, such as large print, electronic text and Braille. Staff assistance for retrieving materials for individuals with disabilities should be available. Alternate formats for print publications should be provided in a timely manner. Readers and research assistants should also be made available to assist patrons with vision impairments.

USM libraries should have assistive technology available for use by patrons, including a CCTV or screen magnification software, screen reading software, and writing software for patrons with vision impairments or learning disabilities. Additional technology can be added as patrons request it, such as book scanners for patrons to convert text to alternate formats, and Braille conversion software and a Braille printer for patrons who are blind.
As addressed elsewhere in this paper, USM libraries, too, should adhere to accessible website standards, and procurement standards for purchasing accessible information technology.

Summary and Recommendations

This report is a starting point and is not comprehensive. Nevertheless, we believe it is a solid beginning. Nationally, other postsecondary institutions are tackling these same issues, and many of our proposed policies/guidelines, recommendations and best practices are drawn from them.

The following are our overall recommendations:

1. Host information on electronic accessibility awareness and training, policies/guidelines and best practices on a central USM website. There are a number of excellent university websites that can serve as models, especially the University of California, which includes a letter of commitment from the University of California President:
   - University of California system Electronic Accessibility: (www.ucop.edu/electronic-accessibility/index.html)
   - Accessibility and Usability at Penn State: (http://accessibility.psu.edu)
   - University of Montana Accessibility: (https://www.umt.edu/accessibility)
   - George Mason University Assistive Technology Initiative: (www.ati.gmu.edu)
   - Web Accessibility Standards at Ohio State University: (www.osu.edu/resources/we/accessibility)

2. Establish strong administrative/executive support at the USM level through the development of system-wide guidelines or policies, as well as best practices, for accessible technology and information to promote consistent standards and accountability at USM institutions. It would be helpful for the USM to collectively establish, with input from all institutions, broad USM goals with success indicators.

3. Adopt a USM procurement statement that demonstrates a commitment to (1) procuring accessible technology whenever feasible and (2) facilitating the development of accessible products and services by working with vendors during the procurement process.

4. Each USM institution should form an Accessible Technology and Information (ATI) Committee comprised of administrators, faculty and staff across campus, including IT staff, web developers, instructional designers, DSS staff, IT administrators, academic administrators, online course managers, procurement managers, library staff and training services to (1) assess current campus policies, practices and resources, and (2) oversee campus accessible technology and information activities, and (3) document progress.

5. Based on the ATI Committee’s accessibility review, each USM institution should develop a plan with specific goals to address accessibility barriers on its campus. Remediating barriers will likely take years to implement. Therefore, campuses should work towards achieving incremental improvements each year. Given that there are finite resources available, each institution should select implementation activities that target accessibility barriers with the greatest impact (e.g., ensuring accessibility of campus web sites that are viewed by the general public).
6. At the USM level, coordinate “Community of Practice” meetings for the campus ATI Committees to benchmark with other USM institutions and collaborate on common issues.

7. Recruit and hire a central USM person for accessible technology and information to provide system-wide consultation to the campuses. USM institutions should consider coming together collectively as a consortium to contribute funds for the position and to secure office space and administrative support.

8. Provide USM institutions with access to a shared enterprise tool for checking website accessibility. As a starting point, it should be determined which tools the various campuses are currently using.

9. Provide USM institutions with the opportunity to pool resources to facilitate accessibility and maximize cost effectiveness, such as developing a USM-wide contract or process for captioning and transcription services. Work has begun on this recommendation; Verb8tm has recently submitted a proposal to the USM with special reduced rates.

10. USM institutions should establish best practices for developing accessible online courses on their campuses. To start, vet the USM Accessible Information and Technology Workgroup’s best practices document for developing accessible online course materials with all USM institutions to determine if consensus can be reached to adopt it as a USM best practice document.

11. Provide on-going USM trainings on accessible technology and information for faculty, staff and administrators, including basic trainings in the form of short bursts of information via the web.

12. Given the scope of captioning needs at all institutions, a fund should be established at the institution or USM level to help ensure that captioning requirements are met.
Appendix

Improving Access: Best Practices for Developing Course Materials with an Online Component

USM Accessible Technology and Information Workgroup

September 2015
Introduction

The USM is committed to making courses accessible to all students and has adapted this checklist of best practices to help faculty members think through and improve accessibility for courses. It is based on the fifth edition of the Quality Matters (QM) Rubric*, used in a collegial process for promoting quality in online/blended courses, which includes the following five key standards* in online course accessibility:

- Course instructions articulate or link to the institution’s accessibility policies and services (QM Standard 7.2).
- Course navigation facilitates ease of use (QM Standard 8.1).
- Information is provided about the accessibility of all technologies required in the course (QM Standard 8.2).
- The course provides alternative means of access to course materials in formats that meet the needs of diverse learners (QM Standard 8.3).
- The course design facilitates readability (QM Standard 8.4).

Online teaching allows students with disabilities to participate in a myriad of courses without limitations imposed by time and physical location. However, new technologies have brought with them modes of communication and media that are inaccessible to students with disabilities and can outstrip the abilities of various assistive technologies used by these students to make content accessible, such as screen readers, computer screen adaptations, and special keyboards.

These recommendations are based on the principles of Universal Design for Learning, which promote student success by making learning more accessible for everyone, including students with diverse abilities, backgrounds, and learning styles. Designing courses from the start with accessibility in mind will enhance the learning experience of all students, not just students with disabilities.

This document was adapted from The George Washington University’s Accessibility Best Practices for eTeaching. USM is grateful to the Teaching and Learning Collaborative at The George Washington University and author Patricia Low Dinneen for permitting the use of this resource. Many members of the USM community contributed their time and expertise
to develop this document.

This document includes information from several sources concerned with accessibility, including the following:

- **Quality Matters**™ Rubric Standards*
- **CANnect**
- **National Center on Accessible Instructional Material**
- **National Center for Accessible Media**
- **CAST**

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**Communicating with Students about Accessibility**

**QM Standards Addressed:**

- 7.2: Course instructions articulate or link to the institution’s accessibility policies and services.
- 8.2: Information is provided about the accessibility of all technologies required in the course.

As courses with an online component continue to evolve, instructors will face many choices as they select the electronic tools and media to best support their learning objectives. The intent of these QM standards is to ensure that the learning management system and the tools and media selected are accessible to students with disabilities.

**Before classes begin**

Students with disabilities should have course information early in order to anticipate and plan for any special needs, particularly the need for accommodations. Students need to be able to determine in advance if the technology/media used in the course will be accessible to them (e.g., captioned videos for a deaf student) and if the technology used in the course is compatible with any assistive technology they use (e.g., a screen reader for a blind student or student with a learning disability).

List all of the technology/media tools required in your course and provide information about their accessibility. A list of TU supported online course technologies will reside on
Towson’s Accessibility website. If you plan to use other technologies than those supported by TU, include a link to accessibility information or accommodation features (usually listed on their websites).

When developing your course, be aware that significant lead time may be needed by DSS to plan and implement accommodations, such as a modification or adjustment to enable a student to access online synchronous technologies (see page 6). Generally, more lead time is needed to implement accommodations in an online course than in a traditional face-to-face classroom setting.

Syllabus
Since your syllabus is a prime communication vehicle for informing students about course expectations and where to find help during the course, make it available to students as early as possible, preferably at least two weeks before class begins. Ensure that you have a statement in the course syllabus that tells online students how to request an accommodation through Disability Support Services. A sample syllabus statement for an online course could read:

If you have a disability, please contact me to discuss your specific needs. A memo from Disability Support Services (DSS) authorizing your accommodations will be needed. Please note that accommodations needed for an online class may be different than those needed for a traditional classroom setting, so it is important that you work with DSS to determine appropriate accommodations for this course as early as possible.

Addressing and Accommodating Differences

QM Standard Addressed:

- 8.3: The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.

Although courses should be designed from the start with accessible technology/media, there will continue to be accessibility issues as the industry continues to catch up with federal standards. In addition to accessibility issues with commercial products and services, there may be accessibility issues with the assistive technology used by students with disabilities to access course content. Screen readers are used by many students with disabilities; unfortunately, it is common for technology/media to be inaccessible with them.
If a particular technology/media or other mode of presentation of course material is inaccessible or presents a barrier for a student with a disability, an alternative must be provided that will allow the student equal access to your course. Even if you have not received any disability-related requests, have alternatives ready. Better yet, universally design your course from the start with built-in alternatives, such as providing captions or a transcript for all videos.

The table below shows common course format barriers and accessible alternatives to remedy them.

<table>
<thead>
<tr>
<th>Format</th>
<th>Barrier</th>
<th>Accessible Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed text</td>
<td>Incompatible with screen readers used by blind/low vision students &amp; students with learning disabilities (LD)</td>
<td>Supplement with audio; provide an electronic copy of text</td>
</tr>
<tr>
<td>Audio</td>
<td>Hearing impaired students may not hear it; students with LD (auditory processing) may have difficulty understanding it</td>
<td>Supplement with printed text</td>
</tr>
<tr>
<td>Video</td>
<td>Blind/low vision students may not see it; hearing impaired students may not hear it; students with LD (auditory processing) may have difficulty understanding it</td>
<td>Provide description, captions or written transcript</td>
</tr>
<tr>
<td>Picture</td>
<td>Blind/low vision students may not see it</td>
<td>Add description</td>
</tr>
<tr>
<td>Synchronous discussion</td>
<td>Blind/low vision students, students with LD &amp; ADHD, students with medical/physical &amp; psychological disabilities may have difficulty following &amp; keeping up</td>
<td>Use asynchronous format for all or some discussions to allow more time for processing &amp; responding</td>
</tr>
<tr>
<td>Tests/Quizzes</td>
<td>Many students with disabilities have slower processing speed that impacts performance (e.g., LD and ADHD, medical/physical &amp; psychological, blind/low vision, hearing impaired)</td>
<td>Provide extended time; Supplement with audio; Provide large text size option</td>
</tr>
</tbody>
</table>
General
Solicit feedback from students to ensure the functionality of accommodations and to determine if any changes are needed.

Tests and quizzes
The most common accommodation for students with disabilities is extended time on tests.

- In Blackboard 9.1 or later, you can use the Test Availability Exception feature to provide select students with extended time on tests and quizzes.

Audio or video files
- Whenever possible, choose video and audio resources for students that are captioned. Captioning or written transcripts provide an alternative to non-text components of online pages. Captioning is the best option to ensure comprehension because words appear in the context of the original visual cues, as with subtitles. Be sure to check captions and transcripts for accuracy before using.
- If you choose to record audio or video, use tools that are compatible with captioning systems (e.g., Panopto and YouTube videos can be captioned). Again, check captions for accuracy before use.
- Captioning or transcript services can be outsourced to vendors such as Verba8im on the Towson University campus or CaptionsSync. Verba8im has special discounted rates for USM institutions. Funding sources may vary. If you need captioning or a transcript as an accommodation for a student with a disability enrolled in your course, DSS typically would pay. If you need captioning or a transcript that is not intended specifically for a student with a disability enrolled in your course, you will need to identify another funding source.

Synchronous classroom tools with audio and visuals (e.g. WebEx or Lync)
- Online synchronous technologies (e.g. web-conferencing tools, where groups can share documents and screens, and communicate via voice, video, text, polls, etc.) are rarely accessible and provide a number of challenges to students with disabilities. For example, hearing impaired students would require a real-time transcript of any communication, a sign-language interpreter via video, or access to the Maryland Relay service. Synchronous communication tools are often incompatible with screen-
readers, which would exclude blind/low vision students and pose issues for students with LD who use screen readers to enhance comprehension. Therefore, it is recommended that synchronous communication tools be used to enhance online curriculum, rather than being a required part of the curriculum. If synchronous communication tools are used as a requirement, a way must be found to provide a student with a disability equal access to participate. DSS should be contacted as soon as a student’s needs are known, preferably well in advance of the start of class, so an effective accommodation can be put into place.

- With the principles of Universal Design for Learning in mind, be aware that other students (e.g., students with English as their second language, nontraditional students) may have trouble accessing the content, and provide appropriate visual and audio content in an alternative form.
- When using audio, encourage students to identify themselves whenever they speak by microphone.

Flash-Based Content
Very few flash-based tools provide content that is fully accessible “out-of-the-box” to both the keyboard alone and to a screen reader.

Since the majority of Flash content on the web has not been produced with accessibility in mind, it is recommended that Flash-based content be used to enhance course content rather than being a required part of the course. If you do decide to use this tool as a requirement, a way must be found to allow a student with a disability equal access to participate. Therefore, present content in alternative formats such as a transcript, or preferably captioning when available. If you are creating Flash elements from scratch, consult the Adobe website.

Making Content Compatible with Screen Reading Software
The following topics describe practices that are necessary to help screen readers interpret content.

Images
The guidelines below pertain to all non-text elements, including charts, graphs, mathematical/scientific notations, photos, and any other elements saved in a visual format.

- Assign alternative text (alt text) to all visual elements, whether in Microsoft Word, PowerPoint, in Blackboard, within a test or email, or elsewhere. The purpose of
alternative text is to explain the meaning of an image when someone cannot view the image directly.
• Extended text descriptions may be needed for complex images.
• Visit the alternative text section of WebAIM’s website for a full set of guidelines.

Basics for all documents and Web tools (including Blackboard)
There are a few simple formatting techniques that highly impact students’ abilities to navigate documents with screen readers.

• Use preset “Styles” for marking headers and lists. Styles give documents a structure of headings that can be paged through by a screen reader. Style elements like ‘Heading 1’ or ‘Title,’ applied consistently and read by a screen reader, orient students to where they are in text-based materials.
• Instead of using the TAB key, the spacebar, or the Enter key to create desired formatting, use built-in tools. For example, in Word, center text using the Align Center tool. When creating lists, use the preset list and outline functions so that items are automatically numbered. Instead of adding space between pages by clicking the Enter key multiple times, add a page break.
• Wherever links are used for navigation or to direct students to a website, provide a meaningful name for the link. Either use the Insert Hyperlink function to replace the web site address (URL) with a textual name (e.g., Towson University in place of http://www.towson.edu) or provide both the title and the hyperlink. A meaningful link should clearly convey what students can expect to find at their destination page.
• If you link to external websites, consider whether those sites are designed with accessibility in mind.

Tables
For tables to be properly interpreted, the user needs to proceed logically through headings and corresponding data. Therefore, formatting tables requires these formatting steps for use with a screen reader:
• Instead of creating columns by using the TAB key or the spacebar, use built-in tools. For example, to create a table in Word, use Insert, Table.
• When data is displayed in a table format, include column and row titles, and specify the header row.
• For complex tables, provide a brief overview of how data has been organized as alternative text under Table Properties.
Microsoft Word/Excel/PowerPoint Documents
There are a few simple formatting steps that greatly impact students’ ability to navigate documents with screen readers.

• Starting with the 2010 versions of Word, Excel, and PowerPoint, Microsoft provides both accessibility guides and Accessibility Checkers to help you detect and correct issues. For more information on creating accessible Microsoft files, refer to Microsoft Help and search using keywords, “creating accessible Word” (or Powerpoint or Excel). WebAIM also provides a helpful guide for Word documents.

• If you want to convert a Word document to an accessible PDF, ensure the Microsoft Word document is properly formatted using the guidelines above.

PDF (portable document files)
• Documents scanned to PDF can either be treated as images or deciphered with text-recognition software. When scanning a document, choose to use text-recognition options. Otherwise, scanned documents will be treated as images, which are NOT accessible.

• If you are converting a Microsoft Word document to a PDF format, ensure the document is accessible first using the guidelines above.

Blackboard
• When copying text from a program like Microsoft Word, it is best to remove formatting by first copying and pasting the text through a simple editor like Microsoft Notepad. You can also use the Remove Formatting tool in the WYSIWYG editor.

• Complete “Alt text” options for images and hyperlinks.

• Use “Style” settings for text in the Blackboard WYSIWYG editor.

Designing an Effective Course Layout and Visual Design
QM Standards Addressed:

• 8.1: Course navigation facilitates ease of use.

• 8.4: The course design facilitates readability.

The manner in which content is organized and displayed in a course can provide a helpful structure to assist students in locating materials. Consistent with the principles of Universal Design for Learning, a simple and intuitive design can facilitate learning for all students.
Course elements and navigation

- Ensure students can move through the course logically and efficiently. This can be done by organizing course content in a consistent manner.
- Keep font styles, sizes, and orientations consistent throughout your online course pages. This is best accomplished by using preset Styles in Blackboard and other page design tools.
- Minimize the number of clicks required to access materials, especially those that are frequently used (e.g. in Blackboard, add a link to grades to the course menu).

Color, visuals and animation

- Avoid having text or visuals flicker, as flickering animations can be a trigger for seizures.
- Use clean, readable fonts such as Arial and Helvetica, and avoid embellished fonts like Comic Sans and decorative serif fonts.
- Use color combinations that provide sufficient contrast between foreground and background.
- Use graphics and animations to demonstrate abstract concepts or illustrate ideas without causing distraction from the materials. Provide accompanying descriptions of the animation in text.
- Use formatting (how content is arranged on the page), graphics, and animation to serve specific instructional purposes, rather than as decorations.
- If color-coding is used, provide an additional means to communicate those distinctions, such as labeling or symbols.