

8-2016

# Conducting the Accessibility Audit: How One Academic Library Identified Barriers for Patrons with Disabilities

Rebecca M. Marrall

*Western Washington University Libraries*, [rebecca.marrall@wwu.edu](mailto:rebecca.marrall@wwu.edu)

Nora K. Burmeister

*Western Washington University*, [nora.burmeister@wwu.edu](mailto:nora.burmeister@wwu.edu)

Follow this and additional works at: [https://cedar.wwu.edu/library\\_facpubs](https://cedar.wwu.edu/library_facpubs)

 Part of the [Library and Information Science Commons](#)

---

## Recommended Citation

Marrall, Rebecca M. and Burmeister, Nora K., "Conducting the Accessibility Audit: How One Academic Library Identified Barriers for Patrons with Disabilities" (2016). *Western Libraries Faculty and Staff Publications*. 53.  
[https://cedar.wwu.edu/library\\_facpubs/53](https://cedar.wwu.edu/library_facpubs/53)

This Lecture is brought to you for free and open access by the Western Libraries and the Learning Commons at Western CEDAR. It has been accepted for inclusion in Western Libraries Faculty and Staff Publications by an authorized administrator of Western CEDAR. For more information, please contact [westerncedar@wwu.edu](mailto:westerncedar@wwu.edu).

# Conducting the Electronic Accessibility Audit: How One Academic Library Identified Barriers for Patrons with Disabilities

Rebecca M. Marrall, Asst. Professor  
Discovery Services Librarian  
Western Washington University Libraries  
(360) 650 – 4493  
[rebecca.marrall@wwu.edu](mailto:rebecca.marrall@wwu.edu)

Nora K. Burmeister, MLS  
Usability & Circulation Services  
Western Washington University Libraries  
(360) 650 – 2113  
[nora.Burmeister@wwu.edu](mailto:nora.Burmeister@wwu.edu)



NDLC'16

National Diversity in Libraries Conference

AUGUST 10-13, 2016

# Introductions

My name is Rebecca M. Marrall, and I'm the Discovery Services Librarian at Western Washington University Libraries.

- Preferred pronouns: She / Her
- Ability: I'm Hard of Hearing (HoH)... which may impact our Q & A session. 😊

Nora Burmeister is an access service staff member, usability specialist, and adjunct library faculty member at Western Washington University. She has a passion for digital instruction, emerging library technology, understanding and optimizing the user experience, and all things accessibility. Nora is unable to attend NDLC in person, but is lending her presence to today's presentation through a series of pre-recorded videos (She is also monitoring the #ndlc2016 for questions).

---

Today's presentation is about the design, implementation, and the results of an electronic accessibility audit of an academic library's online presence.

The goal was to identify actionable items to pursue in order to reduce electronic barriers for our patrons with disabilities.



# Our learning outcomes have informed today's agenda...

**Learning Outcome(s):** At session's end, attendees will feel empowered to begin this conversation at their institution, and will have new knowledge and free resources to do so.

## Agenda:

- Background & Rationale
- Audit Methodology & Limitations
- Results
- Reflections (Or, What We Would Do Differently)
- Future Directions
- Resources for Attendees





# Definitions

**Accessibility:** Accessibility refers to the design of products, services, and environments for people with disabilities.

Electronic: Also called web accessibility, electronic accessibility refers to the design of electronic platforms used by people with disabilities.

Physical: Refers to the design of physical environments used by people with disabilities.

Instructional: Refers to the design of instructional spaces (e.g., classrooms or reference desks) and / or products used by people with disabilities. See Universal Design for Learning.

**Usability:** Usability refers to the knowledge and practices designed to enhance the user experiences in both online and physical environments.

**Note:** I will not provide a primer on which electronic barriers affect which populations with disabilities. There are entire courses, texts, and suites of online tools that provide this education. Please visit our toolkits for some of these resources.



# Background: How did we get started?

Western Libraries re-invigorated the Usability & Design Working Group in Summer 2015. The Usability & Design Working Group gathers, analyzes, and interprets usability data in order to improve our users' experience with online services. This Working Group performs user research, conducts usability tests, and provides analytics on the Western Libraries website, catalog, discovery services, document delivery, interlibrary loan, mobile interfaces, and other areas as needed.

**Our vision?** Patrons discover useful and usable content with ease, rendering their online experiences at Western Libraries both valuable and necessary to academic success.

Electronic, physical, and instructional accessibility are key elements of that vision.



# Patron Populations at Western Washington University

Western Libraries provides services for over 15,000 students and over 1,000 faculty and staff. Of these numbers...

- Nearly 1,000 students are registered with the campus disability office.
- Of these 1,000 students, nearly two-thirds are receiving accommodations for cognitive / learning-related disabilities.
- Many students are enrolled in the extended education (online) programs.
- No clear statistics on the number of staff and faculty with disabilities.
- Furthermore, this information is gathered from those who self-identify – which means these statistics are not the complete picture of disabilities at WWU.



# Audit Methodology

NDLC'16

National Diversity in Libraries Conference

AUGUST 10-13, 2016



# The Systems Approach

Our library's entire online presence is a patchwork composition of different systems (which are provided by several different vendors). Thus, we decided to assess each platform that our users experience most frequently.

## Platforms:

- **Drupal:** Homepage, General CMS.
- **ContentDM:** Archival and special collections (OCLC).
- **InterLibrary Loan:** Drupal homepage, Atlas Systems (vendor), Catalog (Primo by Ex Libris)
- **Catalog Interfaces:** Basic, Advanced, Journals, MyAccount, Search Results, Browse (Primo by Ex Libris)
- **LibGuides & LibAnswers:** Subject, Course Research Guides (SpringShare)
- **Article Databases** (EBSCO, ProQuest)
- **Writing Instruction Support:** Word Documents and PDFs (Microsoft, Adobe)
- **Western CEDAR:** Institutional repository (Digital Commons)
- **Library Instruction Tutorial:** Online learning object (Guide on the Side, Drupal, and H5P).



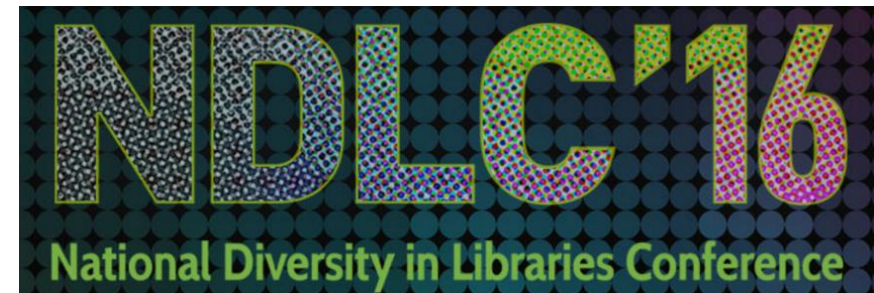
# Methodology Overview

## Content Audit:

- Before we started the accessibility audit, Rebecca completed a full content audit of the library's online presence. This directly informed our next steps.
- Inventory of all systems, and affiliated content types, analytics, and stakeholders.

## Automated Accessibility Checker:

- Assessed fifteen high impact systems (looking at two to ten pages per system).
- Ran selected webpages through WebAim's WAVE checker.
- Automated checkers offer more consistency than a manual effort. Not perfect but an automated checker provides a snapshot of accessibility issues.



# Methodology Overview

## Collect Data:

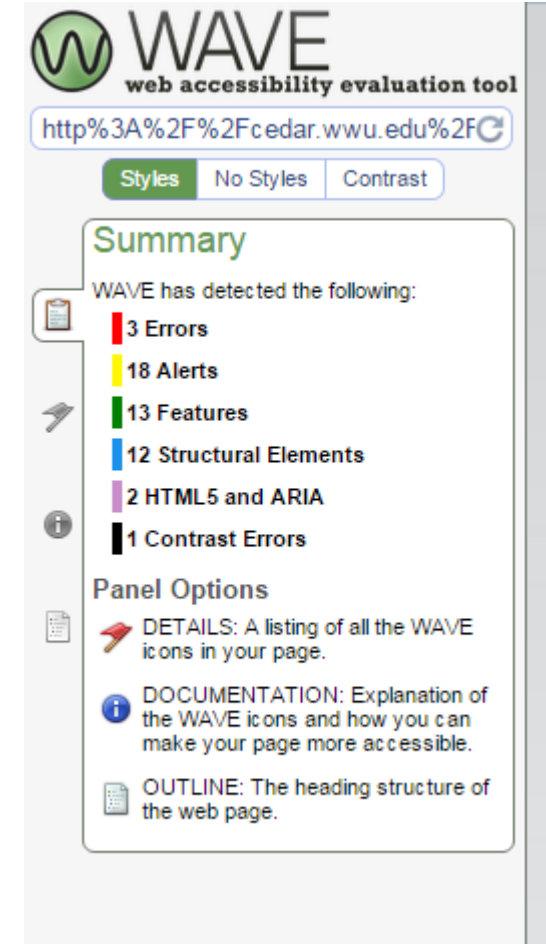
- Recorded the number of errors, alerts, and other features.
- Took accompanying screenshots.

## Summary Statement (per Platform):

- Total count of each type of issue, and why it matters.
- A summary statement can be more useful for the non-IT among us.

## Ratio:

- Provides quick information about the accessibility of a platform, which guides improvement priorities.



# Audit Timeline

## Fall 2015:

- Completed website content audit.
- Identified the methodology, and created the spreadsheet.
- Captured screenshots and raw results.

## Winter 2016:

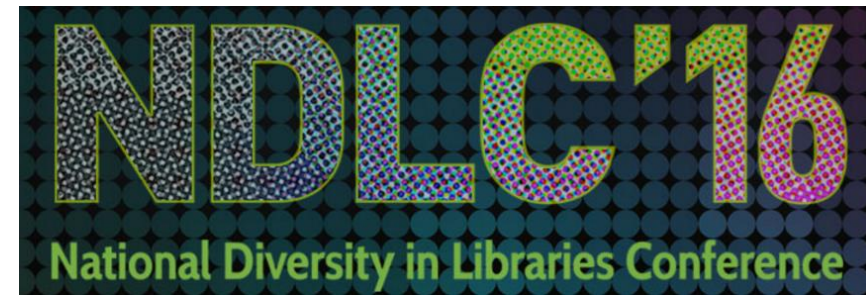
- Wrote the summary statements, and identified rankings for each platform.
- Gathered actionable items from results.

## Spring 2016:

- Shared initial results and the audit template with campus web developers.

## Summer 2016:

- Prepared for this presentation. 😊
- Developed the toolkits for local and national communities.





# Demonstration Video

<https://youtu.be/3o1M-NIib4c>

*Note:* Video captions are available.

The logo for the National Diversity in Libraries Conference 2016 (NDLC'16) is displayed. The letters 'NDLC' are in a large, bold, sans-serif font, filled with a dense pattern of small, multi-colored dots. The year '16' is also in a large, bold, sans-serif font, filled with a similar dot pattern. The background of the entire slide is a dark, textured pattern of small, overlapping circles in various shades of purple, blue, and green.

AUGUST 10-13, 2016

National Diversity in Libraries Conference

# Results

NDLC'16

National Diversity in Libraries Conference

AUGUST 10-13, 2016

# Results Summary

Upon crafting the summary statement, and comparing the raw results, we were... slightly terrified. The cumulative error and alert counts painted a rough picture:

- 65 Errors
- 69 Alerts
- 36 Structural Elements
- And more...

What does this all *mean*?

However, upon review of the data, we saw that the raw numbers contained both good news *and* some opportunities to improve. Thus, in order to move away from the overwhelming and somewhat misleading data, we implemented two new strategies:

- Summary Statement
- Ratio of Good News to Bad News





# Sample Entry in the Audit Results

Results: WAVE Alerts (Type & Frequency)	Total Counts (Good and Bad)	Platform Summary: Pros, Cons & Recommendations for Improvement	Bad	Good	Ratio (Good/Bad) The higher the number the more accessible the platform
1 error, 30 alerts, 7 features, 19 structural elements, 20 HTML5 and ARIA, 1 contrast error	Digital Commons platform totals: Bad: 3 errors (broken skip navigation links, empty links, missing form label). 26 alerts (Suspicious alternative text, nearby images with the same alt text, missing fieldset, suspicious link text, redundant links, access keys, non-link underlined text, redundant title texts) Good: 10 features (linked images with alt text, image buttons with alt text, form labels, fieldset, skip link target), 13 structural elements (heading levels, unordered lists, definition/description lists, inline frame).	Digital Commons is the platform we use for our institutional repository, and as the focus of that service is increasing access to institutional materials, it's important that the platform is accessible to all of the different patron types that might need to utilize any IR materials. Some of Digital Commons flaws are authoring errors - missing alt text, skipped headings - that could be fixed through author education of common accessibility issues. Other issues (such as the 16 contrast errors) could be improved by either the user utilizing high contrast settings on their monitor or by web authors selecting a different, more contrasting color scheme for the site.	29	23	0.7931034483
3 errors, 6 alerts, 15 features, 37 structural elements, 303 HTML5 and ARIA, 11 contrast errors.	LibAnswers platform totals: Bad: 3.5 avg. errors (missing form label, empty heading, empty button, broken ARIA reference), 4.5 avg. alerts (nearby image with same alt text, fieldset missing legend, noscript element) Good: 30 avg features (alt text, null or empty alt text, linked image with alt text, form labels, fieldsets skip links, skip link targets), 38 avg. structural elements (heading levels 1, 2, 3, ordered lists, unordered lists).	LibAnswers is a mostly accessible platform, with strong features (alt text, or indication of empty alt text, skip links and skip link targets) and good use of structural elements. Headings are consistently used to indicate the importance of the text and to mark changes in sections. Minimal errors and alerts are observed, and they are almost entirely user-created errors (things like missing alt text and missing form labels) These errors only serve to emphasize the importance of educating all content authors on the importance of accessible web content creation).	8	68	8.5

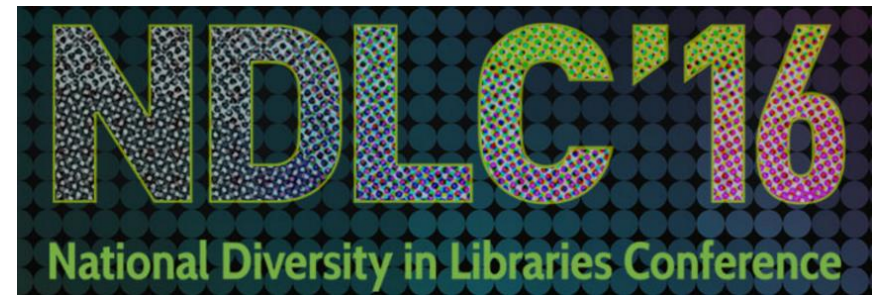


# Examples of Actionable Items

**Content Author Education:** Many of the errors we encountered were more minor issues, such lack of alternative text for images. These issues can be addressed through consistent content author education and resources.

**Web Developer Education:** Some of the errors we encountered included major infrastructural issues, which can impact how assistive technology operates. This means our Drupal developers need to partner with our campus experts to learn how to improve our sites.

**Accessibility Clause:** Acquisitions personnel should have an electronic accessibility clause in any vendor negotiations process. This leads us to the VPAT...



# Examples of Actionable Items

**Voluntary Product Assessment Template (VPAT) & Vendor Negotiations:** We have little control over third-party interfaces such as article databases; however, we can negotiate for electronic accessibility improvements. One such method is to have vendors complete a VPAT, in which they detail how their product meets the legal requirements and standards for web / online accessibility.

## Voluntary Product Accessibility Template®

### *Criteria*

- Section 1194.21 [Software Applications and Operating Systems](#)
- Section 1194.22 [Web-based Internet Information and Applications](#)
- Section 1194.23 [Telecommunications Products](#)
- Section 1194.24 [Video and Multi-media Products](#)
- Section 1194.25 [Self-Contained, Closed Products](#)
- Section 1194.26 [Desktop and Portable Computers](#)
- Section 1194.31 [Functional Performance Criteria](#)
- Section 1194.41 [Information, Documentation and Support](#)

### Supporting Features

Hosted by the [Information Technology Industrial Council](#).



# Reflections

(Or, What We Would Do Differently)

NDLC'16

National Diversity in Libraries Conference

AUGUST 10-13, 2016

# What Would We Do Differently?

**Timeline:** We would shorten the timeline of platform assessment in order to avoid complications inherent in a dynamic web environment.

**Automated Accessibility Checkers:** We only used one type of accessibility checker (there are many more). One future project? Assess our website with multiple checkers and record differences.

**Sustainability & Effort:** This audit is time-consuming and effort-intensive.

**Methodology Changes:** Cumulative error and alert counts initially looked terrifying. However, this misleading “raw numbers” approach changed our methodology because of this – and we added a summary statement.

**Ratio:** The results from the ratio are only used to prioritize our efforts (i.e., where do we start?).





# Future Directions

NDLC'16

National Diversity in Libraries Conference

AUGUST 10-13, 2016

# Community Partnerships

**Campus Web Accessibility Consortium:** Western is fortunate to have a campus-wide web accessibility group which has created electronic accessibility tools for web developers. Upon presentation of this project, they asked for a template methodology to use as a campus model.

**Libraries Diversity Committee:** We have shared the results with the Libraries' Diversity Committee, and have scheduled a Brown Bag in order to share our results with all of our colleagues.

## Future Partnerships?

- Disability Advisory Council (Campus-wide disability advocacy group) – Awareness.
- Disability Outreach Center (Student-run program) – Testing and response to user needs.



## More Projects

**Audit Results Follow-Up:** Continue support for web developers and content authors within the Libraries and across campus in order to create an accessible web presence.

**Instructional Accessibility Toolkit:** The Usability & Design Working Group will now focus on creating a toolkit aimed at supporting library instructors in classroom and public service settings.

**Disability Office:** The Usability & Design Working Group would like to reach to the disability campus to conduct user testing on specific platforms and while using specific assistive technology.

**Continual Evaluation:** How can we improve the electronic accessibility audit? Adopt other strategies for improving our online presence?





# Resources for Attendees

**NDLC'16**

**National Diversity in Libraries Conference**

AUGUST 10-13, 2016



# We're happy to share!

My colleague, Nora K. Burmeister, and I have created several toolkits, videos, and templates for attendees who are seeking an introduction to accessibility issues and strategies.

Here is an introductory video: <https://youtu.be/eqDhBZqf23w>

- Advocating for Accessibility Toolkit: Convince your colleagues of the necessity in assessing and improving library spaces. [bit.ly/advocate4access](http://bit.ly/advocate4access)
- Electronic Accessibility Toolkit: An introduction to, and a collection of, free resources about electronic accessibility. [bit.ly/advocate4access](http://bit.ly/advocate4access)
- Accessibility Audit Template: A model of what we created to track our findings. [bit.ly/audittemplate](http://bit.ly/audittemplate)
- Complete Audit Findings: [bit.ly/wwulibaccess](http://bit.ly/wwulibaccess)



# Sources

Nielsen Norman Group. (2016). “Topic: Accessibility.” URL: <https://www.nngroup.com/topic/accessibility/>

Section508.gov. (2016). “Learn about Section 508 requirements and responsibilities.” URL: <https://www.section508.gov/content/learn>

Usability.gov. (2016). “Accessibility basics.” URL: <https://www.usability.gov/what-and-why/accessibility.html>

University of Washington DO-IT Program. (2016). “Homepage: Disabilities, opportunities, internetworking, and technology.” URL: <http://www.washington.edu/doit/>

WCAG.org. (2016). “Web Content Accessibility Guidelines (WCAG) Overview.” Accessed July 2016. URL: <https://www.w3.org/WAI/intro/wcag>

WebAim.org. (2016). “WAVE – Web Accessibility Evaluation Tool.” URL: <http://wave.webaim.org/>

Western Libraries Usability & Design Working Group. (2016). “Usability homepage.” URL: <https://library.wvu.edu/udwg>



# Thank you for your time and attention!

## Questions? Please contact us!

Rebecca M. Marrall, Asst. Professor  
Discovery Services Librarian  
Western Washington University Libraries  
(360) 650 – 4493  
[rebecca.marrall@wwu.edu](mailto:rebecca.marrall@wwu.edu)

Nora K. Burmeister, MLS  
Usability & Circulation Services  
Western Washington University Libraries  
(360) 650 – 2113  
[nora.Burmeister@wwu.edu](mailto:nora.Burmeister@wwu.edu)

The logo for the National Diversity in Libraries Conference (NDLC'16) features the text "NDLC'16" in a large, stylized font. Each letter is filled with a different pattern of small, colorful dots in shades of blue, green, yellow, and red. The letters are outlined in a thick yellow border.

National Diversity in Libraries Conference

AUGUST 10-13, 2016