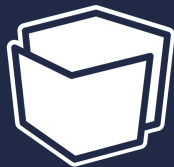


Drupal Camp Asheville

Implementing WCAG:

The Difference Collaborating with Testers with
Disability Makes

July 12, 2025



designHAMMER
BUILDING SMARTER WEBSITES

Overview

01. Intro

02. Project Background

03. Accessibility 101

04. Collaboration Process & Examples

05. Key Takeaways and Q & A

01.

Intro

Who are you?

Are you responsible for a website that has accessibility
compliance requirements?

Are you responsible for accessibility validation of websites in your
organization?

Any frequent users of assistive technology?



DesignHammer



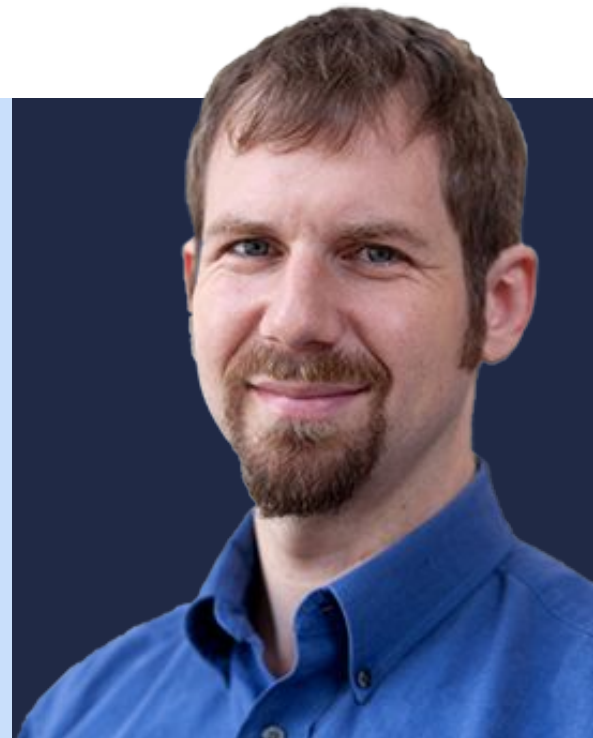
- Full service website strategy, design, development, and support firm based in Durham, NC.
- Designing smarter websites since 2001.

Stephen Pashby

Director of Consulting, DesignHammer

Over a decade of experience in website strategy, accessibility, SEO, analytics, & usability consulting

Experience working with associations, business, government, health care, higher education, & non-profits



What will you learn today?

- What accessibility is and why it matters
- Benefits and limitations of common accessibility testing approaches
- How to incorporate an accessibility partner into your project workflow
- Examples of “gray areas” in accessibility standards from an actual project
- How we collaborated to deliver a usable website for users with disabilities



Disclaimer



- I am not a Drupal developer, so there may be Drupal specific accessibility questions I cannot directly answer.
- We will cover some specific accessibility issues we were able to address in this project, but you should consider your own website's content and functionality when determining your own accessibility compliance.
- We will not be providing official legal advice.
Consult your own counsel as appropriate.

02.

Project Background

Duke University is engaged in clinical research initiatives advancing development of medications, procedures, and devices; enhancing diagnostic capabilities for illnesses; and promoting health and preventing disease. Clinical research is conducted with the participation of volunteers from the patient community and the public. We created a new website for our patients and community members, enabling anyone to easily locate and volunteer for upcoming studies, and view study results.

– Duke Office of Clinical Research

Duke Research Website



- Joint effort of Duke Office of Clinical Research (DOCR) and the Clinical & Translational Science Institute (CTSI)
- DOCR and CTSI wanted to replace a basic clinical trials directory on the Duke Health site with a full-featured, audience focused clinical research website
- Chief goal was to connect with multiple communities to improve diversity of participants in clinical trials
- Website seen as part of bi-directional communication efforts to ensure communities have a voice in what is studied (research with community rather than research on community)

Major Project Components

- Daily Feeds import of study data source
- Multilingual support
- User testing
- Accessibility required (WCAG 2.1 AA)



03.

Accessibility 101

Types of Disabilities

- Visual
- Auditory
- Mobility
- Cognitive
- Other / Hidden



Accessibility is the inclusive practice of removing barriers that prevent digital interaction and access for people with unique abilities.

P.O.U.R.



Perceivable - identify content and interface elements

Operable - use controls, buttons, navigation & other necessary elements

Understandable - presentation & design follow a predictable pattern & users can comprehend the content

Robust - designed to function on all appropriate technologies.

Definition:

Section 508

Section 508 is an amendment to The Rehabilitation Act of 1973 which requires access to programs and activities that are funded by Federal agencies and to Federal employment. It strengthened requirements for access to electronic and information technology in the Federal sector.



Definition: ADA Compliance

The **Americans with Disabilities Act (ADA)** became law in 1990. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public.



Definition: WCAG

WCAG refers to **Web Content Accessibility Guidelines**, which are published by the World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI). The Web Content Accessibility Guidelines (WCAG) provide recommendations for making Web content more accessible.



WCAG Basics

- Developed by the Accessibility Guidelines Working Group (AG WG) and is recognized worldwide.
- Provides a single technical standard for digital content accessibility
- Explains how to make digital content more accessible for people with disabilities



How can you tell if your site is accessible?

- Assume or hope?
- Install an overlay/widget?
- Automated testing?
- Manual testing?



Assume or Hope?



- WebAIM surveyed the top 1 million websites and found 95.9% detectable WCAG conformance failures on their homepage, with an average of 56.8 errors per page.
- Approximately 8,800 ADA Title III complaints filed against organizations in 2024 (a 7% increase over 2023)
- Many accessibility issues are caused by content:
 - 56% of images aren't accessible
 - 93% of domains have at least one page with an inaccessible image
 - 64% of pages have links that aren't clear to people with disabilities
 - 90% of sites had at least one page with an inaccessible link

Issues with Overlays

- They do not correct the underlying problems (band-aid solution)
- May not protect you from litigation
- They can create more usability issues making it difficult for some users
- Can be incompatible to the user's assistive tech
- They do not comply with WCAG guidelines



Limitations of Automated Testing

- Only finds 70-80% of the issues
- Requires manual checking/verification (provisional passes and failures)
- Limited keyboard accessibility testing
- Cannot detect the logical flow or meaning of the content
- Cannot detect useability issues, only technical rule based
- Works best for website monitoring and in tandem with manual testing



Issues with Naive Manual Testing

- Miss important accessibility/usability issues
- Not account for common usage patterns of actual users who use Assistive Technologies (AT) natively
- Takes more time
- May result in a false sense of accessibility



Benefits of Manual Testing by Native Users of Assistive Technologies

- Real users can find the issues that will affect real people
- The human touch and interpret the content and the meaning behind it
- Testers who are native AT users can find issues others may overlook



Accessibility Compliance Vendor



- For this project, we partnered with Ablr, a mission driven nonprofit full-service disability inclusion consultancy.
- Ablr offers digital accessibility services, disability inclusion training and consulting, and workforce development programs.
- 70% of the Ablr team represents people with disabilities.
- Ablr's goal is to make digital products accessible and usable, not just compliant.

Ensuring that our outreach included individuals with disabilities or those utilizing assistive technology was a priority, as inclusive representation in clinical trials and studies is essential for fostering better health outcomes for all populations.

– Lynn Sutton, Assistant Dean, Clinical Research Initiatives and Alliances at Duke University School of Medicine

04.

Collaboration Process & Examples

Collaboration Process

- Deliver to client (DOCR) and Ablr at the same time
- Consolidate feedback from both
- Advise client of choices (where appropriate)
- Resubmit revised version to Ablr prior to submission to client



Collaboration Stages



- Wireframes
 - Determine relative placement and prominence of page elements
 - Typically homepage, most complicated pages, and least complicated page
- Design
 - Demonstrate the intended look and feel for the new site
 - Best with actual/representative content and images

Collaboration Stages



- Beta candidate
 - Demonstrate all features and functionality of the site
 - Training on client use
 - Additional content may remain
- Final candidate
 - Final, ready to launch website
 - All content and functionality ready for launch

How We Collaborated on Issues

1. Presentation to Ablr
2. Compare to WCAG guideline
3. Discuss challenge with default WCAG adherence
4. Collaborated to identify appropriate accessible solution



Study Directory View

- The Study Directory view provides a list of all actively enrolling or coming soon studies at Duke. It provides filters which allow users to drill down to specific studies that may apply to them.



Clinical Trials Directory

Filters

Keyword

Age

Category

- Please select -

☐ Healthy Participants

Location

- Any -

☐ Compensation

☐ Materials available in Spanish

Sex/Gender

- Any -

Sort

☒ Alphabetical

☐ Most Recent

Submit

283 clinical trials found.

Children with atrioventricular septal defect (CHSS Cohort)

Heart and Circulation

We are doing this study to learn more about children with atrioventricular septal defect. We hope to improve care for patients with this condition in the future.

Compensation: No

Ages: 0-18

Non-Oncology

Duke University Hospital

Study Details

Contact

402-C-124 (Study for Healthy Volunteers)

Research for Healthy Adults

We are doing this study to find out if giving a drug called Exparel (the study drug) as a spinal injection is a safe and effective option for pain management. The study drug is approved to treat pain after surgery and is injected into the surrounding area where the surgery was done. We want to know if the study drug can also be given as an intrathecal (into the space surrounding the spine) injection to help control pain.

Compensation: Yes

Ages: 18-50

Non-Oncology

Duke University Hospital, Other

Study Details

Contact

A Randomized Phase II Study of Systemic Chemotherapy with or without Hai Fudr/Dexamethasone in Patients with Unresectable Intrahepatic Cholangiocarcinoma

Gastrointestinal Cancer

We are doing this study to find out whether hepatic artery infusion (HAI) pump therapy with fluorouracil and dexamethasone is an effective treatment for cholangiocarcinoma that cannot be removed with surgery and has not been treated yet. We want to find out whether the HAI pump treatment plus GemOx chemotherapy works as well as or better than GemOx alone at extending the time before your disease gets worse.

Compensation: No

Oncology

Study Details

Contact

A window of opportunity study of Patritumab Deruxtecan in patients with brain metastases

Brain and Spine Metastasis

We are doing this study to find out if the study drug, patritumab deruxtecan, can be measured in brain tumor tissue after a single dose is given before surgery to remove brain metastases.

Compensation: No

Ages: 18-110

Oncology

Duke University Hospital

Study Details

Contact

Issue 1: DOM Order



- **Issue**
 - The DOM order does not match the visual order. The Filters sidebar comes visually before the Trials listing, but comes after the Trials listing in the focus order.

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Filters

Keyword

Age

Category

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- **Nuance**
 - The first time a user visits this page, they may wish to start with the filter controls. On subsequent page reloads, they likely will wish to start with the results.
- **Resolution**
 - Skip link provided to filters.

Clinical Trials Directory

Filters

Keyword

283 clinical trials found.

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Ages: 18-110

Oncology

Duke University Hospital

Study Details

Contact

Issue 2: Multiple Links with Identical Text



- **Issue**

- Multiple links with identical link text but different destinations are present, and the purpose of each link is not clear within its programmatically determined link context.
- Each Clinical Trial has a link to Study Details and Contact, but as you navigate through multiple links with the same name it can become difficult to distinguish which link goes with which trial unless there is unique text for each link. This is especially challenging when looking at a list of links on the page.

Clinical Trials Directory

Filters

Keyword

Age

Category

- Please select -

☐ Healthy Participants

Location

- Any -

☐ Compensation

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Sex/Gender

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Oncology

Duke University Hospital

Study Details

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- **Issue**
 - Multiple links with identical link text but different destinations are present, and the purpose of each link is not clear within its programmatically determined link context.
- **Nuance**
 - Typical approach is to have a single link and to include descriptive anchor text in all links. Due to the long nature of study names and the number of studies on the page, this provided a poor user experience.
- **Resolution**
 - Wrapped cards in divs with aria-labelledby attribute set to the study ID to provide context for screen reader users.

div.views-row 400.31 x 638.02

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Compensation: Yes

Ages: 18-50

Non-Oncology

Duke University Hospital, Other

Study Details

Contact

Contact

```
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▼<div class="view-content"> ( flex )
  ><div class="views-row" aria-labelledby="s
    tudy-id-pro00072055">...</div>
    ...
    ▼<div class="views-row" aria-labelledby="s
      tudy-id-pro00112280"> == $0
      ><div class="views-field views-field-tit
        le">...</div>
      ><div class="views-field views-field-fie
        ld-study-category-1">...</div>
      ><div class="views-field views-field-fie
        ld-study-treatment">...</div>
      ><div class="views-field views-field-fie
        ld-study-compensation">...</div>
      ><div class="views-field views-field-fie
        ld-study-age-range">...</div>
      ><div class="views-field views-field-fie
        ld-study-category">...</div>
      ><div class="views-field views-field-fie
        ld-study-locations">...</div>
      ><div class="views-field views-field-not
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      ><div class="views-field views-field-not
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      </div>
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      ><div class="views-row" aria-labelledby="s
        tudy-id-pro00111064">...</div>
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        tudy-id-pro00114717">...</div>
      ><div class="views-row" aria-labelledby="s
        tudy-id-pro00106593">...</div>
      </div>
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        labelledby="pagination-heading">...</nav>
      </div>
    </div>
  </div>
  ><aside class="layout-sidebar-first" role="compleme
    ntary">...</aside>
</div>
```

Issue 3: Results Message

- **Issue**
 - Status message is not automatically announced by the screen reader.
 - When updating the filter. The updated results are not announced by the screen reader. Recommend the alert notifies how many search results available.



Clinical Trials Directory

Filters

Keyword

Age

Category

- Please select -

☐ Healthy Participants

Location

- Any -

☐ Compensation

☐ Materials available in Spanish

Sex/Gender

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Sort

☒ Alphabetical

☐ Most Recent

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Oncology

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Issue 3: Results Message



- **Issue**
 - Status message is not automatically announced by the screen reader.
 - When updating the filter. The updated results are not announced by the screen reader. Recommend the alert notifies how many search results available.
- **Nuance**
 - Due to Drupal limitation, a page reload was required on applying filters. This took screen reader users back to the top of the page with no context about what had changed.
- **Resolution**
 - On submission, changed the page title to indicate that new results have loaded. Also set focus on the number of studies displayed.

Clinical Trials Directory

Filters

283 clinical trials found.

☐ Healthy Participants ⓘ

Location ⓘ

- Any -

☐ Compensation ⓘ☐ Materials available in Spanish ⓘ

Sex/Gender ⓘ

- Any -

Sort

☒ Alphabetical☐ Most Recent

Submit

Compensation: No

Ages: 0-18

Non-Oncology

Duke University Hospital

Study Details

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Compensation: No

Ages: 18-110

Oncology

Duke University Hospital

Study Details

Contact

Other Common Accessibility Gotchas

- Must provide 2 different ways to find all pages.
Common approaches:
 - Site Search
 - Sitemap



Other Common Accessibility Gotchas



- Multilingual content:
 - HTML lang attribute must match the language of the text, so the screen reader can understand how to read it
 - Drupal's native translation functionality can handle this, but you need to create a translation for every Drupal object
 - In views, you can configure the view to show only translated nodes or nodes that are translated and nodes that do not have translations

Feedback has been exceedingly positive—exceeding our expectations. We are enthusiastic about providing a site that is accessible to all of our patients and community members.

- Marissa Stroo, Director, Clinical Research Operations – Data, Duke University School of Medicine

05.

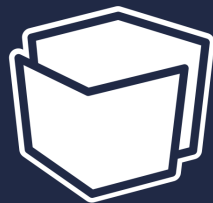
Key Takeaways + Q&A:

Key Takeaways

- Automated testing not enough
- Even if you are trying to pay attention to WCAG, you can miss things if you don't incorporate testers who natively use Assistive Technologies
- There are gray areas in WCAG where working with a accessibility partner can help you identify the best way forward



Questions?



designHAMMER
BUILDING SMARTER WEBSITES

**Thank you Drupal Camp
Asheville!**

