## MICHIGAN STATE UNIVERSITY | Usability/Accessibility Research and Consulting

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Subject: Web of Science Preliminary Accessibility Evaluation
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Usability/Accessibility Research and Consulting (UARC) conducted a preliminary accessibility evaluation of Web of Science to evaluate its conformance with WCAG 2.0 AA Criteria. This evaluation did not include all functionality or content of the site or all WCAG 2.0 AA Criteria.

During this evaluation, a number of issues were found that will make the site difficult or impossible to use for some individuals with disabilities.

Critically, screen reader users will find many interactive elements difficult or impossible to use, due to a lack of labels, instructions, roles, and values. All keyboard users (including screen reader users and individuals with dexterity impairments) will also experience difficulties due to non-standard keyboard usage and full-page refreshes when values are changed. Incorrect focus order and insufficient focus visibility will also negatively affect these individuals.

A number of other issues were found that will make it difficult for users with a variety of disabilities from effectively using the system, including improperly structured headings, incorrect reading order, insufficient color contrast, inability to skip repeated content, and changes made due to focus shifts.

To improve access for users with disabilities, UARC recommends a full WCAG 2.0 AA evaluation of Web of Science and that the problems discovered be remediated by Web of Science.

# Preliminary Findings

## Document Structure
- Headings are not appropriately nested. [WCAG 2.0 SC 1.3.1]
- In the table on the Cited Reference Results page, screen readers jump from the first row to the last row, then to the second row (and the rest of the table). [WCAG 2.0 SC 1.3.2]
- Reading order for years on the "More options" page for Publication Year (Search Results) does not match visual order (screen reader reads left to right, top to bottom, instead of top to bottom, left to right), resulting in years being read out of order. [WCAG 2.0 SC 1.3.2]

## Keyboard Support
- Custom dropdowns (e.g., "All Databases", "Basic Search", "My Tools", "Sign In", etc. on Basic Search page) do not work with standard keyboard controls. [WCAG 2.0 SC 2.1.1]
- Keyboard focus is reset to the top of the page when any dropdowns (e.g., search type, timespan selection, etc.) on Search pages are changed. [WCAG 2.0 SC 2.4.3]

- Keyboard focus is reset to the top of the page when options (sort order, refine results options, etc.) on Search Results page are changed. [WCAG 2.0 SC 2.4.3]
- Focus is not consistently visible for interactive elements. [WCAG 2.0 SC 2.4.7]
- "Usage Count" lightboxes unexpectedly appear when "Usage Count" receives focus (and do not close after focus is removed). [WCAG 2.0 SC 3.2.1]
- Focus order for years on the "More options" page for Publication Year (Search Results) does not match visual order (advances from left to right, top to bottom, instead of top to bottom, left to right), resulting in years being read out of order. [WCAG 2.0 SC 2.4.3]
- Keyboard users cannot advance focus to list of results on Search Results page (skip to content link only advances focus to the Results sidebar, and no heading is provided at the start of the results list). [WCAG 2.0 SC 2.4.1]

## Forms and Data Submission

- Search input not labeled on Search pages; Sort dropdown and checkboxes not labeled on Search Results page; Record Content dropdown and first/last record number text inputs not labeled in Print and Email Records lightboxes on Search Results page; checkboxes, page number text input, and language and document type inputs not labeled on Cited Reference Results page. [WCAG 2.0 SC 3.3.2]
- "Optional" instruction on "From" and "Notes" text inputs (Email Records lightbox on Search Results page) not read out to screen reader users. [WCAG 2.0 SC 3.3.2]

## Color and Visual Characteristics

- White text on orange and orange text and symbols on grey background (all pages), white text on light grey ("x" to clear search inputs on Search pages), and light grey text on white ("Search within results for…" under Refine Results on Search Results page) have insufficient contrast. [WCAG 2.0 SC 1.4.3]

## Custom Elements and Dynamic Content

- Dropdowns (e.g., "Topic" dropdown on Basic Search page and "Sort By" dropdown on Search Results page) not identified as dropdowns and not read out correctly by screen readers (e.g., the Topic dropdown on Basic Search is read out as "clickable link topic clickable menu button sub-menu editable topic combo box collapsed topic" instead of "combo box collapsed topic"). [WCAG 2.0 SC 4.1.2]
- Custom dropdowns (e.g., "All Databases", "Basic Search", "My Tools", "Sign In", etc. on Basic Search page) not identified as dropdowns, do not work with standard keyboard controls, no instructions are provided on the method of interaction, and no announcements when content is expanded/collapsed. [WCAG 2.0 SC 4.1.2]
- The role and value of expandable/collapsible content is not provided to screen reader users (i.e., that the element can be used to expand/collapse content, and whether the content is currently expanded or collapsed). [WCAG 2.0 SC 4.1.2]
- No feedback is provided to screen reader users when content is expanded or collapsed. [WCAG 2.0 SC 4.1.2]
- Many buttons (e.g., "Refine", "View Abstract" on Search Results page) are coded as links instead of buttons. [WCAG 2.0 SC 4.1.2]

## Usability Observations

- There is no easy way to determine what filters are being applied on the Search Results page. Checkboxes in the Refine Results panel do not remain checked when applied (users must click "…More" link above Refine Results to see applied filters).

- The "more options / values…" options in the Refine Results panel (Search Results page) brings up a new page with selection options, making it difficult for keyboard-only users to interact with (must move past the rest of the page to get to relevant content).