Accessiblü

Managed Digital Accessibility Ops

Accessibility Evaluation Report:

AIP Publishing

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Conducted by: Accessiblü, LLC

For: Library Accessibility Alliance (LAA)

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Summary of Accessibility Findings

Accessiblü conducted a **high-level accessibility evaluation** of the AIP Publishing platform to assess its usability for individuals with disabilities. The review was conducted using the JAWS and NVDA screen readers, keyboard-only navigation, and manual inspection for conformance to select WCAG 2.2 AA success criteria.

AIP Publishing demonstrates thoughtful design in several key areas, particularly in its content organization and search functionality. The platform provides multiple pathways for users to access scientific literature, with clearly structured navigation patterns that support different research workflows. However, our evaluation identified several accessibility barriers that may create challenges for users who rely on assistive technology.

The primary improvement opportunities center around page structure, landmark regions, and interactive element labeling. While these issues do not prevent basic platform functionality, addressing them would significantly enhance the user experience for people with disabilities and improve overall platform usability for all users.

Key Findings

Top 3 Issues Identified

1. **Missing Landmark Regions**

- **Description:** Page content lacks proper landmark regions (main, navigation, complementary) that help screen reader users navigate efficiently.
- **Impact:** Blind and low-vision users may have difficulty understanding page layout and locating specific content sections.
- **WCAG Success Criteria:** 1.3.1 Info and Relationships (A), 2.4.1 Bypass Blocks (A)

2. **Inconsistent Link Labeling**

- **Description:** Some interactive elements lack descriptive accessible names, particularly image links and navigation elements.
- **Impact:** Screen reader users may encounter generic announcements like 'link graphic' without understanding the link's purpose or destination.
- **WCAG Success Criteria:** 2.4.4 Link Purpose (In Context) (A), 4.1.2 Name, Role, Value (A)

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3. **Heading Structure Gaps**

- **Description:** Page heading hierarchy contains gaps, jumping from H1 directly to H3 without intervening H2 levels.
- **Impact:** Users navigating by headings may become confused about content hierarchy and miss important sections.
- **WCAG Success Criteria:** 1.3.1 Info and Relationships (A), 2.4.10 Section Headings (AAA)

Disabilities Impacted

Blind and Low-Vision Users

- **Issues:** Missing landmark regions, unclear link purposes, and inconsistent heading structure create navigation challenges.
- **Impact:** These users may need to explore more content linearly rather than jumping efficiently between sections, potentially increasing time to complete research tasks.

Users with Motor Disabilities

- **Issues:** Keyboard navigation patterns may be affected by unclear interactive element boundaries and focus management.
- **Impact:** Users who rely on keyboard navigation may need additional keystrokes to locate and activate desired controls.

Neurodiverse Users

- **Issues:** Inconsistent page structure and unclear element labeling may increase cognitive load during platform navigation.
- **Impact:** Users may experience increased difficulty understanding page organization and predicting where to find specific functionality.

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Page-Specific Findings and Impact Analysis

The following section lists the accessibility findings by page and WCAG violations, describing their impact on users with opportunities for improvement.

Homepage (https://publishing.aip.org/)

Opportunity Area	WCAG Success Criteria	Description	Example
Landmark Region Implementation	1.3.1 Info and Relationships (A)	Page content lacks proper landmark regions to help users navigate efficiently between different sections.	Main content area, navigation menu, and footer sections are not programmatically identified as landmarks.
Link Accessibility Enhancement	2.4.4 Link Purpose (A)	Several links lack sufficient context or descriptive text to indicate their purpose or destination.	Multiple 'Featured figure link graphic' elements without distinguishing information about their content.
Heading Structure Consistency	1.3.1 Info and Relationships (A)	Page heading hierarchy contains gaps, jumping from H1 directly to H3 without proper H2 structure.	'Connecting the Physical Sciences' (H1) followed by 'Active Topics' and 'Submit your Article' (H3) without intervening H2 levels.
Interactive Element Labeling	4.1.2 Name, Role, Value (A)	Some buttons and controls lack accessible names or labels for screen reader users.	Unlabeled buttons in the interface that provide functionality but no programmatic identification.

Impact Summary:

Implementing landmark regions would allow screen reader users to navigate efficiently using landmark navigation commands. Adding descriptive link text would help users understand link purposes before activation. Correcting heading structure would provide clear content hierarchy for users navigating by headings. These improvements would create a more predictable and navigable experience for all users while significantly benefiting those using assistive technology.

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Homepage Screenshot

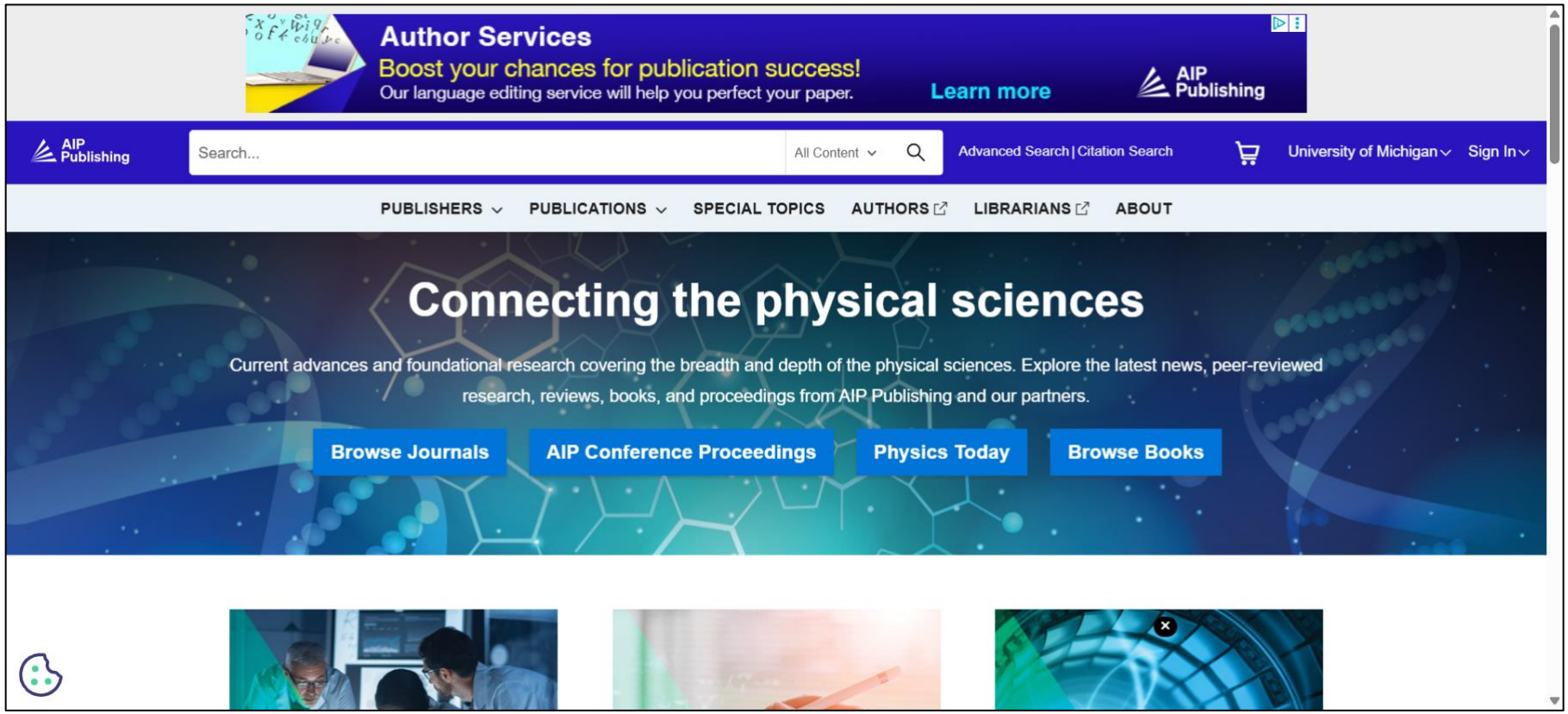

Figure 1. AIP Publishing homepage showing main navigation, hero content section with 'Connecting the physical sciences' heading, and featured content areas with browse options for journals, conference proceedings, Physics Today, and books.

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Search Results Page (Photoacoustic Tomography Search)

Opportunity Area	WCAG Success Criteria	Description	Example
Page Structure Enhancement	1.3.1 Info and Relationships (A)	Search results page lacks comprehensive landmark regions to help users understand page layout.	Search results content area not properly identified as main landmark region for screen reader navigation.
Heading Hierarchy Improvement	2.4.10 Section Headings (AAA)	Heading structure includes gaps that may confuse users navigating by heading levels.	Heading levels skip from H1 to H3 without appropriate H2 structure for content organization.
Search Result Accessibility	2.4.4 Link Purpose (A)	Individual search result links may lack sufficient context to indicate their specific content.	Result links that require additional context to understand the specific article or resource being referenced.
Focus Management Enhancement	2.4.3 Focus Order (A)	Interactive elements could benefit from improved focus visibility and management.	Search filters and result links that could provide clearer focus indicators for keyboard users.

Impact Summary:

Enhanced page structure would help users quickly locate search results versus navigation options. Improved heading hierarchy would allow users to understand the relationship between search parameters and results. Better focus management would benefit keyboard users navigating through search results. These improvements would streamline the research process for users with disabilities while making search functionality more intuitive for all users.

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Search Results Screenshot

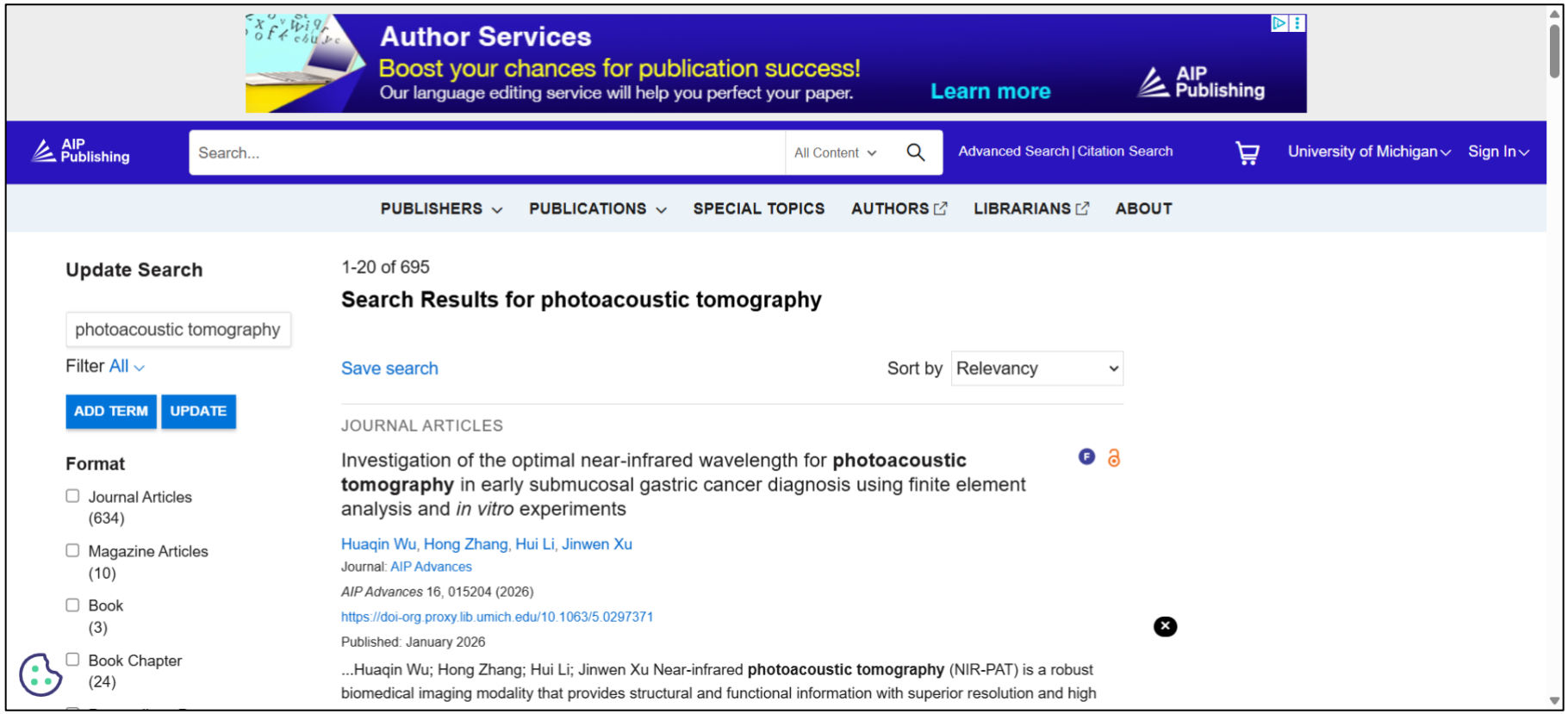

Figure 2. Search results page for 'photoacoustic tomography' showing 695 results with filtering options, result count, and individual article listings with author information and publication details.

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Advanced Search Page

Opportunity Area	WCAG Success Criteria	Description	Example
Form Structure Enhancement	1.3.1 Info and Relationships (A)	Advanced search form could benefit from improved structural organization and landmark identification.	Query builder and citation search sections not clearly delineated with proper landmark or grouping structures.
Input Label Associations	3.3.2 Labels or Instructions (A)	Some form inputs rely primarily on placeholder text rather than persistent labels.	Citation year, volume, and issue fields using placeholder text that disappears when users start typing.
Boolean Logic Clarity	3.3.2 Labels or Instructions (A)	Boolean operator controls could provide clearer instructions about their function and current state.	AND/OR operators that could benefit from additional context about how they affect search logic.
Error Prevention Enhancement	3.3.4 Error Prevention (AA)	Form validation could provide more proactive guidance to prevent submission errors.	Citation search requiring journal selection but not clearly indicating this requirement until after submission attempt.

Impact Summary:

Improved form structure would help users understand the relationship between different search options. Persistent labels would ensure users always understand input expectations. Clearer boolean logic instructions would help users construct more effective searches. Enhanced error prevention would reduce user frustration and help users complete successful searches more efficiently.

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Advanced Search Screenshot

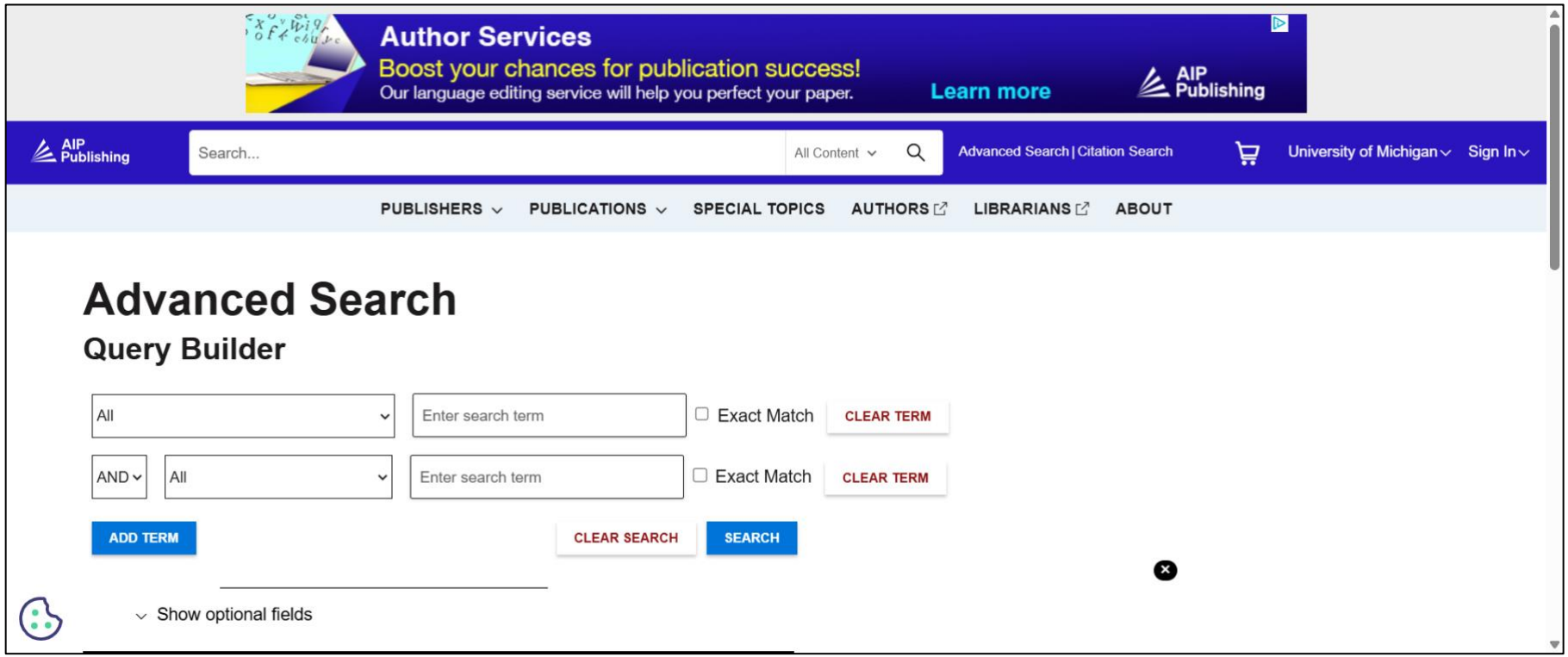

Figure 3. Advanced Search page showing Query Builder interface with search term inputs, boolean operators, exact match options, and Citation Search section with fields for journal, year, volume, issue, and first page.

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Individual Article Page

Opportunity Area	WCAG Success Criteria	Description	Example
Content Organization Enhancement	1.3.1 Info and Relationships (A)	Article pages could benefit from clearer structural organization using landmark regions.	Article content, metadata, and navigation tools not clearly delineated with appropriate landmark identification.
Color Contrast Improvement	1.4.3 Contrast (AA)	Some text elements may not meet minimum contrast requirements for accessibility.	Certain link colors or secondary text that could benefit from increased contrast against background colors.
Interactive Element Sizing	2.5.5 Target Size (AAA)	Some interactive elements could benefit from larger target sizes for easier activation.	Small buttons or links that may be difficult for users with motor impairments to accurately select.
Link Differentiation Enhancement	1.4.1 Use of Color (A)	Links within text blocks could be more easily distinguished without relying solely on color.	In-text links that might benefit from additional visual indicators beyond color changes.

Impact Summary:

Better content organization would help users locate article metadata, citation tools, and related content more efficiently. Improved contrast would benefit users with low vision or color vision differences. Larger interactive targets would assist users with motor impairments. Enhanced link differentiation would help users identify actionable elements regardless of color perception abilities.

Individual Article Screenshot

Figure 4. Individual article page for 'Quantitative photoacoustic tomography of blood oxygenation enhanced by Monte Carlo modeling' showing article title, author information, publication details, abstract, and article interaction tools.

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Code Recommendations and Technical Guidance

The following code examples demonstrate HTML-first solutions for the most critical accessibility improvements. These recommendations focus on semantic markup that provides broad assistive technology support.

Testing Requirements: These code suggestions are recommendations and not guaranteed fixes. All changes should be thoroughly tested with assistive technology (screen readers, keyboard-only navigation) to confirm effectiveness before implementation.

WCAG Flexibility: WCAG guidelines are designed to provide multiple paths to compliance. Developers have flexibility to implement these improvements using alternative approaches with CSS and JavaScript, as long as the underlying accessibility principles are met.

1. Landmark Region Implementation

Current implementation lacks semantic landmark structure:

```
<!-- Current implementation --> <div class="header-content">   <div class="nav-items">...</div> </div> <div
class="main-content">   <div class="search-results">...</div> </div> <div class="footer-content">...</div>
```

Recommended implementation with semantic landmarks:

```
<!-- Recommended implementation --> <header role="banner">   <nav role="navigation" aria-label="Main
navigation">     <ul>       <li><a href="/publishers">Publishers</a></li>       <li><a
href="/publications">Publications</a></li>       <!-- other navigation items -->     </ul>   </nav> </header>
<main role="main">   <section aria-labelledby="search-heading">     <h1 id="search-heading">Search Results</h1>
<!-- search results content -->   </section> </main>  <footer role="contentinfo">   <!-- footer content -->
</footer>
```

2. Link Purpose Enhancement

Current implementation provides generic link text:

```
<!-- Current implementation --> <a href="/article/123">   <img src="figure.jpg" alt="Featured figure link
graphic"> </a>
```

Recommended implementation with descriptive link purpose:

```
<!-- Recommended implementation --> <a href="/article/123">   <img src="figure.jpg" alt="Figure 3: Quantum
interference patterns in semiconductor materials">   <span class="sr-only">View full article</span> </a>  <!--
```

```
Alternative approach with descriptive text --> <a href="/article/123" aria-label="Read article: Quantum
interference patterns in semiconductor materials">   <img src="figure.jpg" alt="" role="presentation">
<span>Featured Research</span> </a>
```

3. Heading Structure Correction

Current implementation skips heading levels:

```
<!-- Current implementation --> <h1>Connecting the Physical Sciences</h1> <h3>Active Topics</h3> <h3>Submit your
Article</h3>
```

Recommended implementation with proper heading hierarchy:

```
<!-- Recommended implementation --> <h1>Connecting the Physical Sciences</h1> <section>   <h2>Current Research
Areas</h2>   <h3>Active Topics</h3>   <!-- topics content -->      <h3>Submit your Article</h3>   <!--
submission content --> </section>
```

4. Form Label Enhancement

Current implementation relies on placeholder text:

```
<!-- Current implementation --> <input type="text" placeholder="Citation year" name="year"> <input type="text"
placeholder="Citation volume" name="volume">
```

Recommended implementation with persistent labels:

```
<!-- Recommended implementation --> <div class="form-group">   <label for="citation-year">Citation Year</label>
<input type="text" id="citation-year" name="year"           placeholder="e.g., 2025" aria-describedby="year-
help">   <div id="year-help" class="help-text">Enter the publication year</div> </div>  <div class="form-group">
<label for="citation-volume">Citation Volume</label>   <input type="text" id="citation-volume" name="volume"
placeholder="e.g., 127" aria-describedby="volume-help">   <div id="volume-help" class="help-text">Enter the
journal volume number</div> </div>
```

5. Button Accessibility Enhancement

Current implementation lacks descriptive button labels:

```
<!-- Current implementation --> <button class="search-btn"></button> <button class="clear-btn"></button>
```

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Recommended implementation with accessible button names:

```
<!-- Recommended implementation --> <button type="submit" class="search-btn" aria-label="Search articles">
<span class="icon-search" aria-hidden="true"></span>   <span class="sr-only">Search</span> </button>  <button
type="button" class="clear-btn" aria-label="Clear search terms">   <span class="icon-clear" aria-
hidden="true"></span>   <span class="sr-only">Clear</span> </button>
```

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Final Thoughts and Recommendations

AIP Publishing demonstrates a solid foundation for delivering scientific content with several accessibility-friendly practices already in place. The platform's logical information architecture and consistent navigation patterns provide a strong base for implementing the accessibility improvements outlined in this report.

The identified opportunities represent strategic investments that will enhance usability for all users while specifically addressing barriers faced by people with disabilities. Most recommendations can be implemented through systematic updates to existing templates and components, making them achievable within regular development cycles.

Implementation Priorities

Immediate Priority (High Impact):

- Implement landmark regions across all page templates to provide structural navigation
- Add descriptive text to image links and unlabeled interactive elements
- Correct heading hierarchy gaps to ensure logical content structure

High Priority (Significant Impact):

- Replace placeholder-only form labels with persistent, accessible labels
- Enhance focus visibility and management for keyboard users
- Improve error prevention and validation feedback in search forms

Important Priority (Enhanced Experience):

- Increase color contrast where needed to meet AA standards
- Enhance link differentiation beyond color alone
- Consider increasing interactive element target sizes for improved usability

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Complimentary Consultation Included

As part of this evaluation, Accessiblü's partnership with the LAA includes one hour of complimentary consulting with the team that conducted this evaluation. This session can be used to discuss implementation priorities, review technical approaches, or address questions about specific recommendations. To schedule this consultation, contact Jeff Rodgers directly at jeff@accessiblu.com.

Disclaimer

Accessiblü prepared this report as a high-level accessibility evaluation of the AIP Publishing platform. The evaluation utilized industry-standard testing methodologies, including screen reader testing (JAWS 2025), keyboard-only navigation, and manual inspection for select WCAG 2.2 AA success criteria.

This report does not represent a comprehensive WCAG compliance audit and should not be seen as a certification of accessibility compliance. While we have identified significant accessibility improvement opportunities and usability enhancement possibilities, this evaluation was limited in scope and may not encompass all accessibility considerations on the platform.

No Legal Liability:

Accessiblü offers this report for informational purposes only. It assumes no legal responsibility for accessibility violations or compliance failures resulting from its use. Organizations seeking formal certification should conduct comprehensive auditing and user testing with people with disabilities.

Limitations of Testing:

This evaluation was conducted at a specific time, and platform updates may have occurred after testing was completed. Additionally, while automated tools and expert reviews were utilized, real-world users with disabilities provide the true measure of accessibility effectiveness. We recommend ongoing user testing and feedback collection as part of any accessibility improvement program.