

Mixed Method Research: Library Homepage Design

Executive Summary

As Duke University Libraries prepares for the redesign of its primary website in 2026, the Assessment and User Experience Strategy (AUXS) department initiated research to understand current design practices and ensure DUL's homepage aligns with contemporary usability expectations. This research aims to support optimizing clarity, accessibility, and task efficiency, not simply aesthetic appeal.

The research comprised four components: a literature review, an environmental scan, analytics analysis, and student focus groups. The literature review assessed professional and scholarly sources to identify current trends, critical features, and prevalent design practices over the last decade. The environmental scan examined peer institution websites to validate observations from the literature review and identify content, design, and navigation patterns currently in use. To evaluate whether these findings aligned with Duke's actual users, Matomo analytics data from Duke's current homepage was analyzed to provide empirical evidence of user behavior and task priorities. In addition, card sort and wireframing activities with Duke's Student Advisory Boards were conducted to confirm or refine the recommendations emerging from the secondary research, informing content prioritization and design decisions based on direct student input. The goal of this report is to provide DUL with evidence-based, practical guidelines on how to design an effective, enjoyable, and easy to use library homepage.

Recommended Design Guidelines

See [appendix c](#) for wireframe examples that implement the following:

Priority

1. Position search as the primary interaction point
 - a. Place a unified Quick Search bar prominently at the top of the homepage
 - b. Provide clear scoping options (e.g., "Books & Articles", "Course Reserves", "Journals") directly within or adjacent to the search bar
 - c. Include a visible link to Advanced Search immediately below or beside the search bar
2. Implement a low-density layout to reduce cognitive load
 - a. Use generous white space between content sections (minimum 40-60px vertical spacing)
 - b. Limit homepage to 4-6 primary content sections maximum
 - c. Apply a simple one- or two-column grid structure rather than complex multi-column layouts
3. Prioritize content placement based on user task frequency and perceived priority

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- a. Order homepage content by documented users' needs & task frequency
 - i. Highest priority: Search (primary), Account Information, Library Hours, Room Reservations, Research Support
 - ii. Lowest priority: News, Events, Exhibits, Special Collections
- b. Place the most frequently accessed content in the top 600-800px of the viewport to ensure visibility without scrolling
- 4. Surface high-demand services in persistent locations
 - a. Place My Account, Ask a Librarian, and Current Hours in the top navigation bar
 - b. Create a Quick Links section immediately below the search bar (not in sidebar), containing Research Guides, Interlibrary Loan, and Research Support
 - c. Consider featuring Room Reservations prominently on the page
- 5. Apply visual elements strategically to support wayfinding
 - a. Limit hero images or feature graphics to one primary visual element
 - b. Use imagery that reinforces institutional identity without competing with functional elements
 - c. Maintain Duke branding through consistent use of color palette, typography, and logo placement
- 6. De-prioritize promotional content
 - a. Position News & Events along with Featured Collections below task-oriented features
 - b. Limit promotional content to compressed sections or secondary placement

Secondary

- 7. Standardize navigation structure and labeling
 - a. Use task-based labels that reflect users' mental models (e.g., "Find Articles" rather than "Databases")
 - b. Implement a persistent top navigation bar that remains fixed on scroll
 - c. Limit primary navigation to 4-5 menu items with clear hierarchical organization
- 8. Establish consistent patterns for interactive elements
 - a. Position chat widget in the bottom-right corner of the viewport
 - b. Place account/login links in the top-right corner of the navigation bar or masthead
 - c. Provide multiple access points to assistance (chat widget at bottom right corner, Ask a Librarian in in navigation, help links in Quick Links)
- 9. Design with modularity and scalability
 - a. Use card-based layouts for featured content, events, and services
 - b. Implement a design system with reusable components to ensure visual consistency
 - c. Test all interactive elements for mobile responsiveness at viewport widths of 320px, 768px, and 1024px

Background

Academic library homepages have undergone a significant transformation over the last decade as user expectations, digital search behaviors, accessibility standards, and technologies have evolved. For many users, the library homepage functions as the primary gateway to their research and academic endeavors. The design and layout of the homepage directly shape users' ability to locate resources efficiently, complete research tasks, and form positive associations with the library and its parent institution.

As Duke University Libraries prepares to redesign its primary homepage in 2026, understanding these evolving standards and user expectations becomes essential. Studies consistently emphasize several trends shaping current homepage design, including growing expectations for intuitive, streamlined search experiences and the continued need to foreground high-demand information such as search, hours, room reservations, and pathways to librarian support. Accordingly, there has been a shift toward cleaner, more minimalist designs that reduce cognitive load and help users orient quickly.

Detailed Findings

Literature Review

Current Trends

Recent literature highlights several major trends shaping contemporary academic library homepage design. Among the most significant is the increasing importance of accessibility standards. For instance, the Web Content Accessibility Guidelines version 2.2 level AA (**WCAG 2.2 AA**) now functions as the baseline for compliant design, requiring alt text for images and icons, proper heading hierarchy, Accessible Rich Internet Applications (ARIA) roles for interactive elements, sufficient color contrast ratios, adjustable text spacing, keyboard navigability, and accessible controls for dynamic content (Shah, 2023). Looking forward, the next version of WCAG (WCAG 3.0) is expected to broaden these requirements to address not only traditional web interfaces but also emerging digital environments such as virtual reality, augmented reality, and IoT platforms, with particular emphasis on cognitive accessibility (BiblioCommons, 2024a; Shah, 2023).

Mobile responsiveness has evolved from a best practice to a foundational requirement. Given the widespread use of smartphones and tablets for academic research, library websites must adapt fluidly to multiple screen sizes and interaction modes, maintain appropriately sized touch targets, and avoid hover-dependent navigation patterns that fail to translate to mobile contexts (Lohakare et al., 2025; Unrein, 2019).

Researchers consistently emphasize the critical role of **prominent search functionality** and **streamlined navigation** structures. Unified search bars have become essential for enabling users to begin research tasks efficiently, while minimalist layouts and simplified top-level navigation reduce cognitive load and improve task completion rates (BiblioCommons, 2024a; Swanson, 2022). This shift toward simplification reflects broader UX principles advocating progressive disclosure: presenting only essential information on the homepage while making additional content accessible through clear pathways.

Most Important Features

The literature identifies a consistent set of high-priority elements that academic library homepages should include to meet user needs and support common tasks (Brown & Yunkin, 2014; Jones & Thorpe, 2014; Lohakare et al., 2025; Velasquez & Campbell, 2022)

- **Search Functionality:** A prominent library catalog or discovery search box positioned near the top of the homepage enables users to begin research tasks immediately. While multiple search boxes can create confusion, this is effectively mitigated by using clearly labeled, tabbed interfaces that distinguish between catalog, articles, and website search (BiblioCommons, 2024a; Velasquez & Campbell, 2022)
- **Library Hours:** Current hours of operation are displayed prominently, allowing users to quickly determine availability without navigating deeper into the site. This information is consistently

identified as among the most frequently sought by library website visitors (Brown & Yunkin, 2014).

- **Research Support Access:** Direct pathways to research assistance—such as “Ask a Librarian” chat widgets and links to subject guides or research portals—address users’ need for immediate help when encountering barriers in their research process. Studies indicate that users who struggle with search tasks quickly seek direct assistance options (Lohakare et al., 2025).
- **Interlibrary loan services:** A clearly labeled link to the interlibrary loan request form to support researchers requiring materials not held in the local collection.
- **Account access:** Links to user account functions (login, renewals, holds, fines) enable patrons to manage their library interactions efficiently.
- **Contact and location information:** Physical address, phone number, and “Contact Us” links positioned in predictable locations (typically footer or top navigation) provide essential wayfinding information for both digital and physical library access.
- **Visual engagement:** At least one image, banner, or graphic element makes the homepage more visually appealing and can communicate institutional identity, though imagery should not compete with functional elements (Unrein, 2019).

Features with Limited Evidence of Value

Certain features appear infrequently on contemporary academic library homepages, suggesting limited user value or potential usability concerns. The literature advises caution before implementing these elements (Brown & Yunkin, 2014; Jones & Thorpe, 2014).

- **Interactive forums and comment sections:** Public-facing comment sections and user forums rarely appear on library homepages in surveyed institutions (Brown & Yunkin, 2014).
- **Auto-playing media:** Videos or animations that begin automatically without user control create accessibility barriers and are explicitly discouraged by WCAG 2.2 guidelines (Shah, 2023).
- **Embedded third-party widgets:** External integrations such as social media feeds or news tickers are uncommon on library homepages and may introduce maintenance and performance issues (Jones & Thorpe, 2014).
- **On-page surveys and polling tools:** Persistent survey widgets or pop-up polls on the homepage are rarely implemented in current library website designs (Brown & Yunkin, 2014).

Design Practices to Consider

Beyond content selection, both presentation and visual hierarchy significantly impact usability and task completion. The literature consistently identifies several core design principles that support effective academic library homepage design (BiblioCommons, 2024a; Lohakare et al., 2025).

- **Accessibility as foundation:** All design decisions must adhere to the four principles of WCAG: perceivable, operable, understandable, and robust. These principles ensure that content is accessible to users with diverse abilities and assistive technologies, forming the baseline for all other design considerations (Shah, 2023).
- **Immediate value communication:** The homepage must communicate its purpose and value within the first few seconds of landing. This requires a clear site title, intuitive layout structure, and visible signposting to high-priority content. Research on first impressions indicates that users form judgements about a website's credibility and utility within 50 milliseconds of page load (Lohakare et al., 2025).

- **Visual simplicity and hierarchy:** Minimalist layouts that prioritize essential links and features reduce cognitive load and improve task efficiency. Rather than attempting to surface all available services, an effective homepage focuses on 5-7 pathways, using visual hierarchy to guide attention to the most critical elements first (BiblioCommons, 2024a).
- **Typography and color strategy:** Readable typography and a restrained color palette support sustained engagement and reduce visual fatigue. Color should be applied purposefully to establish hierarchy, indicate interactivity, and reinforce institutional branding—not merely for decoration. Sufficient contrast ratios (minimum 4.5:1 for body text) are essential for both accessibility compliance and general readability (Shah, 2023).
- **Navigation consistency:** The primary navigation menu, typically positioned at the top of the page, should maintain visual prominence and remain consistent across all pages within the site. Predictable navigation patterns reduce the cognitive effort required for wayfinding and allow users to focus attention on content rather than interface mechanics (Velasquez & Campbell, 2022).
- **Task-oriented calls-to-action:** The highest-priority tasks should receive prominent visual treatment and positioning. This often means placing search functionality, hours of information, and research support options in the primary focal areas of the page—typically the top third of the viewport (Lohakare et al., 2025).

Design Practices to Avoid

Certain design approaches consistently hinder usability and should be avoided on academic library homepages (Brown & Yunkin, 2014; Lohakare et al., 2025).

- **Overwhelming or cluttered layouts:** Homepages with excessive content and insufficient white space increase cognitive load and reduce task completion efficiency. Research indicates that minimalist designs with clear visual hierarchy outperform dense, information-heavy layouts (Lohakare et al., 2025).
- **Library jargon in navigation labels:** Navigation terminology that reflects internal organizational structure rather than user mental models creates confusion and increases search time. Labels should use language familiar to the target audience (Brown & Yunkin, 2014).
- **Fragmented search interfaces:** Multiple search boxes without clear differentiation cause confusion about which tool to use. When different search functions are necessary, a unified, tabbed interface reduces cognitive burden (Lohakare et al., 2025).

Environmental Scan

Overview

The AUXS department examined fourteen academic library homepages representing both private and public institutions. The examined institutions are as follows:

- Carnegie Mellon University (CMU)
- Columbia University
- Duke University
- Emory University
- Northwestern University (NU)
- New York University (NYU)

- Pennsylvania State University (PSU)
- University of Florida (UF)
- University of Minnesota Twin Cities (UMN)
- University of North Carolina at Chapel Hill (UNC-CH)
- University of North Carolina at Greensboro (UNCG)
- University of Southern California (USC)
- University of Washington (UW)
- University of Wisconsin Milwaukee (UWM)

The scan focused on three primary areas: overall layout and visual structure, placement and accessibility of high-priority features, and navigation patterns. The analysis also identified uncommon design choices and noteworthy features that may enhance usability or user engagement.

- [Primary navigation](#): All fourteen libraries employ a primary navigation menu containing multiple sub-menus that organize links to services, tools, collections, research support, and library information. However, considerable variation exists in how institutions categorize and label this content. Two features consistently appear in top menus across institutions: (1) user account access, typically labeled "My Account" or "My Library Card," and (2) direct messaging with library staff, commonly labeled "Ask," "Ask Us," or "Ask a Librarian."
- [Search Interface](#): Every scanned homepage positions a search bar as the first major content section immediately below the primary navigation, the most prominent placement available. Most implementations use centered, full-width search bars, further emphasizing their primacy in the visual hierarchy.
- [Featured content area](#): The section immediately following the search interface typically contains content the institution prioritizes for high visibility. Consistent placement of this section across all scanned sites suggests intentional promotion of key services, resources, or institutional news.
- [Additional content sections](#): Beyond the search and featured content area, homepages include varying numbers of additional content sections. The number of distinct sections ranges considerably across institutions, with some homepages incorporating multiple sections while maintaining relatively compact page lengths through efficient layout strategies.
- [Footer structure](#): All scanned homepages conclude with a bottom menu containing institutional information and secondary navigation. Common footer elements include the parent university logo, primary contact information (physical address, phone number, email), social media links, copyright notices, policy links, employment information, and staff portal access.

Primary Navigation

- **University banners**: Four institutions (4/14) position a university-branded banner above the library navigation, containing links to broader university resources and donation pages (e.g., UMN, UWM).
- **Fixed navigation**: Two libraries (2/14) implement sticky navigation bars that remain visible while scrolling (CMU, NU). Most institutions do not employ this pattern.
- **Logo placement and linking**: Twelve libraries (12/14) place a self-linked library logo in the upper left corner of the primary navigation. Eleven institutions (11/14) include a link to the parent university homepage, with placement varying: seven appear in the top menu, seven in the footer, and three institutions include it in both locations. Three libraries do not include any visible link to the parent university homepage. Four institutions (4/14) visually integrate the university and library logos into a single design element (e.g., Emory, UW).

- **Sub-menu interaction patterns:** Navigation sub-menus are revealed through three primary interaction patterns: hover-triggered menus (5/14), click-triggered menus (5/14), and direct links to landing pages (4/14). Some institutions use mixed approaches, employing arrow icons to distinguish between expandable menus and direct links.
- **Common sub-menu categories:** Analysis identified ten recurring navigation categories, though labeling varies considerably across institutions:
 - **Account Access:** "My Account," "My Library Card," "Sign In," "Your Library Account" (one institution uses an unlabeled profile icon)
 - **Library Hours:** "Hours," "Visit," "Locations & Hours"
 - **Ask/Contact:** "Ask Us," "Ask a Librarian," "Contact," "Chat with a Librarian"
 - **About:** "About," "About the Libraries"
 - **Services:** "Services," "Library Services," "Help & Support," "Services & Tools"
 - **Research Support:** "Research & Teaching," "Research Support," "Research Guides," "Tools," "Start Your Research"
 - **Using the Library:** "Find," "Borrow & Request," "Use the Libraries," "Search & Find," "How do I..."
 - **Libraries & Collections:** "Libraries," "Collections," "Select a Location," "Locations & Hours" (often separate; three institutions combine them: NU, UF, UNCG)
 - **Donations:** "Support Us," "Give"
 - **Spaces:** "Spaces," "Library Spaces," "Spaces & Technology"
 - Additional labels that did not fit these categories include: "Events," "Course Support," "Exhibitions & Programs," "Maps," "News/Subscribe," "Materials," "Information For," "Renew Materials," "Off-Campus," "Public Access Support," and "Accessibility Services."
- **Search duplication in navigation:** Five institutions (5/14) include a secondary search function in the primary navigation, either as a visible search field or accessed via a magnifying glass icon that triggers a pop-up search interface.



Figure 1 New York University header nav

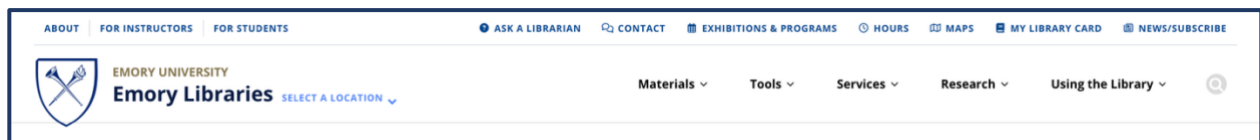


Figure 2 Emory University header nav

Search Interface

The search bar is the most prominent feature on all fourteen homepages, typically centered on the screen (12/14).

- **Layout and width:** Search field width varies across implementations. Five institutions (5/14) use full-width search bars that extend nearly edge-to-edge with only the search button interrupting the span. Seven institutions (7/14) use narrower search fields, often positioned alongside images or dropdown menus for material type selection.

- **Visual treatment:** Ten institutions (10/14) incorporate images behind, above, or beside the search bar to enhance visual appeal, with placement behind the search field being most common (8/14). Four libraries adopt minimalist approaches without imagery. When present, images typically feature students, campus architecture, or library materials. Four institutions (4/14) make these images or their captions clickable, linking to destinations such as library hours (CMU), digital collections (UMN), or library news (USC).
- **Advanced search access:** Five libraries (5/14) provide a visible link to advanced search forms at the surface level. Two additional institutions (Duke, USC) include advanced search access via a toggle within the search interface.
- **Search scoping patterns:** Two primary scoping approaches emerged across the scanned homepages:
 - Material type filtering: Options to narrow searches by resource type (articles, journals, databases, research guides, digital collections)
 - System switching: Toggles between major search systems (library website, catalog, discovery service)
 - Implementation varies considerably. Some institutions use links that redirect to separate search pages, while others employ toggles that apply filters within the same interface. A few sites incorporate both approaches.
- **Scoping interface design:** Seven institutions (7/14) enable users to narrow queries by material type directly from the homepage search interface. Five libraries use dropdown menus for this functionality, and two use tabbed interfaces. NYU employs tab-like visual elements that function as links to separate search pages rather than true filter toggles. Two institutions (UNCG, Duke) combine tabs with side menus, allowing filtering by both material type and metadata field (e.g., title, author).
- **Integrated quick links:** Ten institutions (3/14) include scoping links within the search bar section, unified by consistent visual padding or background images (e.g., UMN, UW). These quick links often provide access to databases and course reserves, though several other institutions make these resources searchable directly through the search interface via toggles or links.



Figure 3 Columbia University search

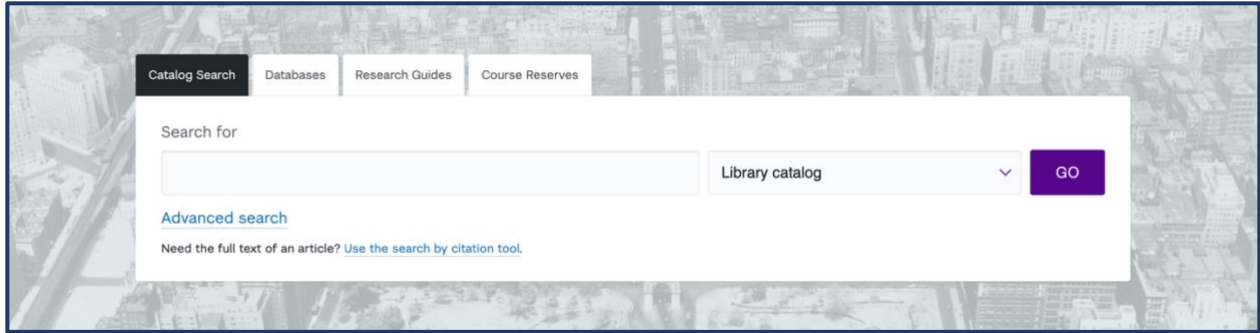


Figure 4 New York University search

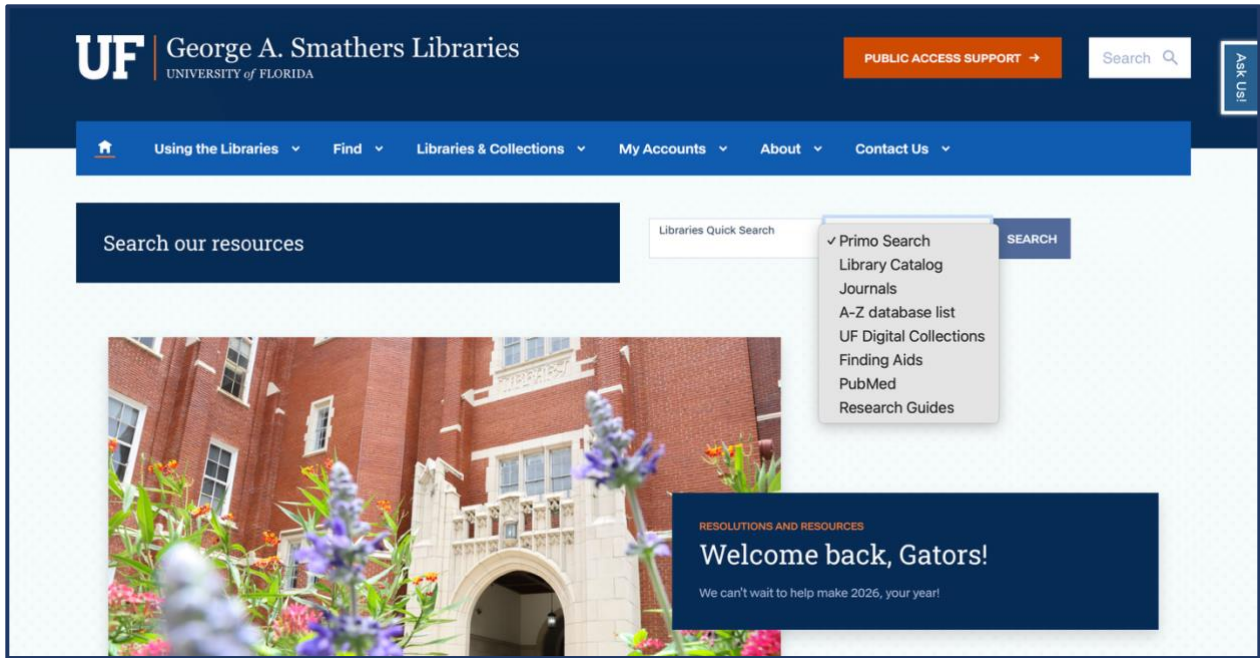
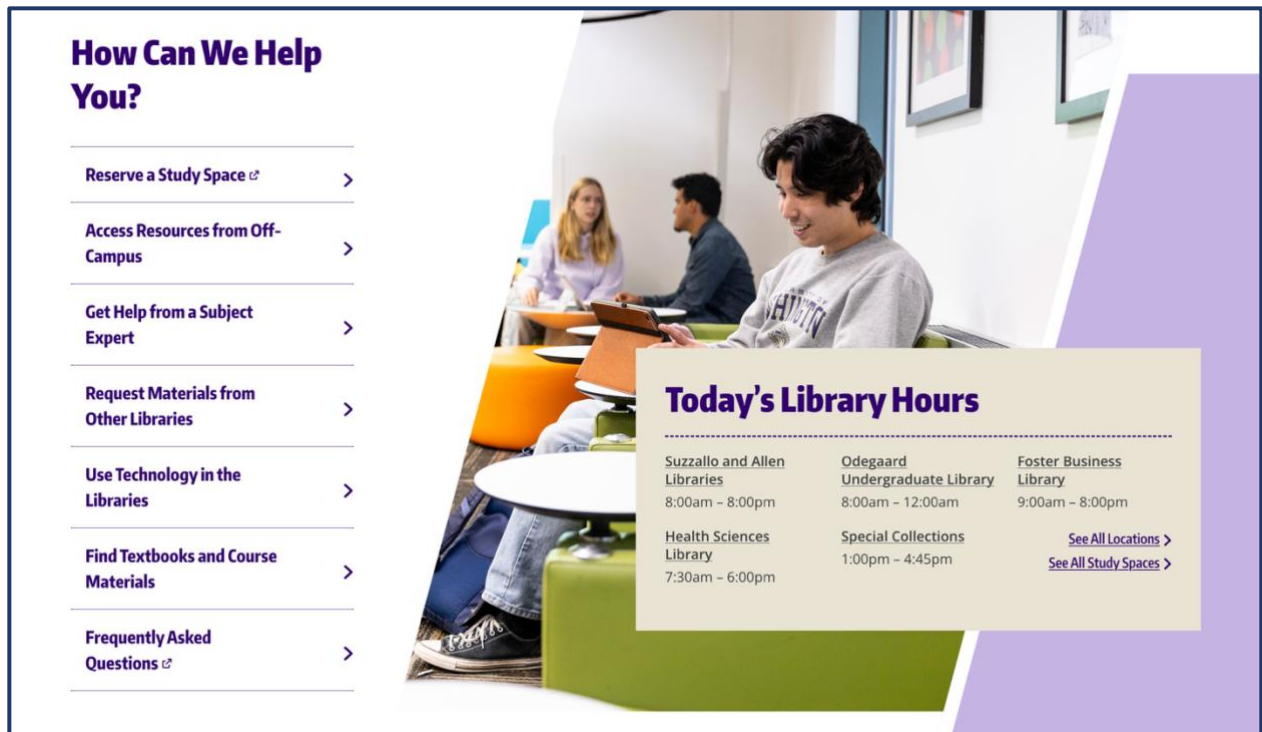


Figure 5 University of Florida search

Featured Content Area

The section immediately below the search interface serves as a secondary focal point on most homepages. Ten institutions (10/14) use this space for quick links section providing access to high-use services such as databases and journals, research guides, citation help, space reservations, printing and technology support, interlibrary loan, and library hours. Four libraries (4/14) dedicate this prominent placement to library news and events rather than service links.



How Can We Help You?

- Reserve a Study Space [↗](#)
- Access Resources from Off-Campus [↗](#)
- Get Help from a Subject Expert [↗](#)
- Request Materials from Other Libraries [↗](#)
- Use Technology in the Libraries [↗](#)
- Find Textbooks and Course Materials [↗](#)
- Frequently Asked Questions [↗](#)

Today's Library Hours

Suzzallo and Allen Libraries 8:00am – 8:00pm	Odegaard Undergraduate Library 8:00am – 12:00am	Foster Business Library 9:00am – 8:00pm
Health Sciences Library 7:30am – 6:00pm	Special Collections 1:00pm – 4:45pm	See All Locations > See All Study Spaces >

Figure 6 University of Washington featured content area



Quick Links

- DATABASES RESOURCES & TOOLS
- JOURNALS & NEWSPAPERS
- CONNECTING FROM OFF-CAMPUS
- FIND YOUR LIBRARIAN
- RESEARCH GUIDES
- RESERVE A SPACE
- INTERLIBRARY LOAN
- COURSE RESERVES

DISCOVER DISTINCTIVE COLLECTIONS

Image found in the General Photograph Collection, CMU Digital Archives

Figure 7 Carnegie Mellon featured content area



Figure 8 Columbia University featured content area

Additional Content Sections

- **News and events:** Twelve (12/14) include a news and events section among their additional homepage content, making this the most common secondary content type.
- **Related content types:** Other recurring sections include exhibitions (5/14), featured collections (7/14), and workshops or training opportunities (3/14). Four institutions (4/14) include spotlight sections dedicated to research help, though navigation to research and study guides more commonly appears in the primary navigation menu and in quick links sections positioned near the search interface.
- **Carousel implementation:** Five institutions (5/14) implement carousel interfaces in one or more additional sections, allowing users to browse multiple pieces of content without leaving the homepage (e.g., NU, USC).


Upcoming Events →

Feb 12 2026 **Zotero: Cite Smarter and Manage Your Research (Online)**
1:00 PM
 Keeping track of your research can be an overwhelming task. Fortunately, Zotero is a tool that can help! In this session...

Feb 12 2026 **Systematic, Scoping, and Literature Reviews: What Type of Review is Right for You? (Online)**
3:00 PM
 This session will provide an overview of systematic and scoping reviews, how they differ from literature reviews, what y...

Feb 17 2026 **Googling for Data: Strategies & Resources (Online)**
2:00 PM
 Do you need to find statistics to support an argument? Or a dataset to analyze as part of a research project? Finding ...

News →




Inaugural Undergraduate Archival Research Project Prizes awarded to two students
 September 2, 2025
 from *Northwestern Libraries*

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Figure 9 Northwestern news & events

FEATURED EXHIBIT

ASK US!



SMATHERS LIBRARY GALLERY (2ND FLOOR), 09/24/25 - 12/12/25

Zora Neale Hurston: Leave Your Mark

Zora Neale Hurston's impact is not limited to her anthropological, ethnographical, and literary contributions. It extends to her ability to persevere through trials and tribulations. By observing Hurston's works, we reinforce her significance. This exhibit calls you, the visitor, to be empowered to do what Hurston and so many of our ancestors had to do during incomprehensible times. LEAVE YOUR MARK! Curated by Genesis Leonard under the guidance of Lourdes Santamaría-Wheeler. All exhibits are free and open to the public during the same hours as the building in which they are housed, unless otherwise specified and with occasional exceptions for maintenance.

Figure 10 University of Florida exhibits

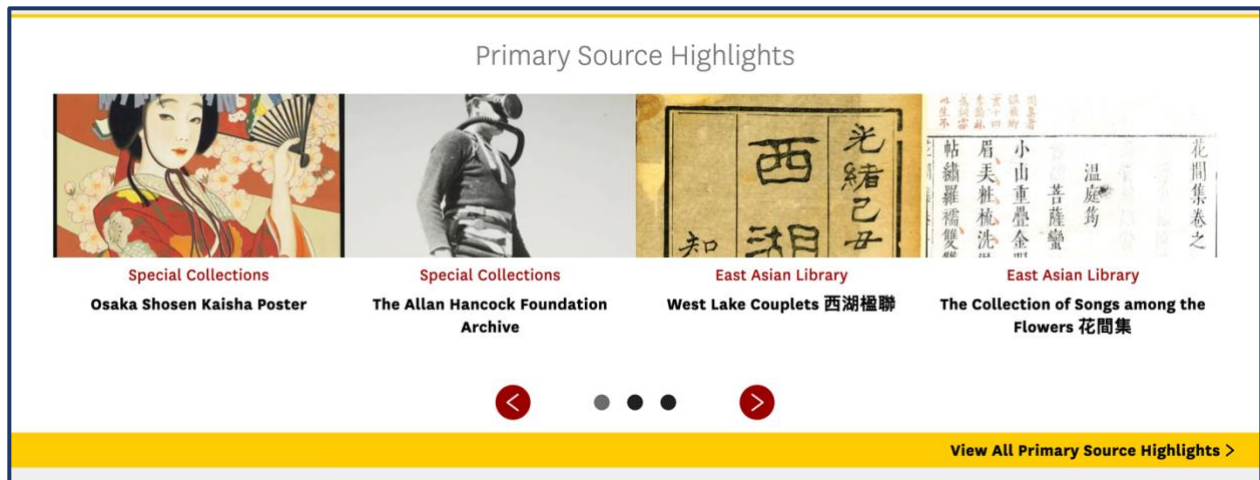


Figure 11 University South Carolina carousel

Footer Structure

- **Logos and branding:** Eight institutions (8/14) include a parent university logo linked to the university homepage in the footer. Four libraries (4/14) include a self-linked library logo in this section.
- **Duplicate navigation:** Footer navigation often duplicates links from the primary navigation and other homepage sections. Five institutions (5/14) provide an additional access point to locations and hours information in the footer.
- **Social media links:** Thirteen institutions (13/14) place social media links in the footer, making this the standard location for these elements.
- **Policy and legal information:** All footers contain links to policy statements and legal information, though specific emphasis varies. Seven libraries (7/14) link to a consolidated policies page, while nine (9/14) provide direct links to privacy policies—either in addition to or in place of a general policies link. Two policy categories frequently receive standalone links: accessibility information (11/14) and non-discrimination statements (7/14).
- **Donation links:** Thirteen institutions (13/14) include a donation link or button in the footer, typically labeled "Give," "Support Our Libraries," or similar variants. Only NU lacks a visible donation link in the footer.
- **Employment and staff access:** Nine libraries (9/14) link to employment opportunities, and seven (7/14) provide access to staff intranet portals.
- **Contact information:** All fourteen homepages include the library's main physical address, phone number, and email address in the footer. All also include copyright notices.
- **Footer density:** Considerable variation exists in footer size and link density. Some institutions, such as PSU, include extensive link collections, while others, such as UNC-CH and UW, maintain compact footers with minimal links.
- **Notable features:** UNCG includes a "Select Language" dropdown menu in the bottom-right corner, enabling translation of homepage text into multiple languages. PSU features an "Acknowledgement of Land" statement in the footer.



Figure 12 Penn State footer

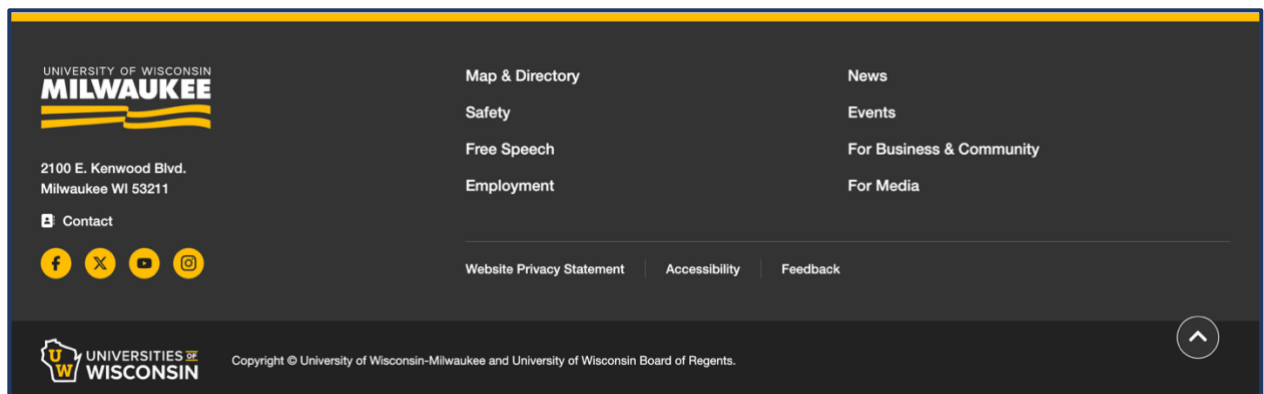


Figure 13 University of Wisconsin Milwaukee footer



Figure 14 University of North Carolina footer

High Priority Features & Placement

Eight high-priority features were identified in the literature review. All scanned libraries provide access to each of those features, often through multiple navigation pathways.

1. **About the Library:** Information about the library's history, mission, and staff directory typically appears in both the primary navigation and footer menus.
2. **User account access:** Account access enables users to monitor checkouts and request renewals. Eleven institutions (11/14) place this feature in the top-right corner of the primary navigation, typically labeled "My Account," "My Library Account," or "My Library Card." Three institutions deviate from this pattern: UNC-CH uses an unlabeled profile icon in the top-right corner; UWM positions account access below the search bar; and UNCG places it in the featured content area.

3. **Contact information:** The library's main physical address, phone number, and email address appear in the footer on all fourteen library homepages.
4. **Direct assistance:** Chat widgets for immediate reference and access assistance appear on nine homepages (9/14), with eight fixed to the bottom-right corner. NU and PSU place chat widgets near this corner with slight variation, while UF positions its widget closer to the top-right. "Ask," "Ask Us," or "Ask a Librarian" links also commonly appear in the primary navigation and in quick links sections within the featured content area.
5. **Research guides:** Research guides or study guides help users narrow their resource search by subject or topic. These are typically accessible through primary navigation sub-menus labeled "Research Support" or "Research & Teaching," through quick links sections in the featured content area, or via links or search options integrated into the search interface. Some libraries offer additional guide types beyond subject-based research guides. For example, CMU provides "Getting Started" guides targeted to specific user populations (i.e., undergraduate students, graduate students, faculty and staff, alumni and visitors).
6. **Hours of operation:** Library hours typically appear in the primary navigation, either displayed directly or accessed via a link, and frequently appear in the featured content area as well. Because most scanned institutions operate multiple library locations, space constraints influence display choices. Seven institutions (7/14) display hours directly on the homepage surface, while seven require users to click a link to view hours of information. Two libraries (CMU, PSU) employ a hybrid approach: displaying current hours as a clickable element that links to a detailed calendar page.
7. **Search bar:** The search bar serves as the central feature of the homepage, positioned in its own visually distinct section on all fourteen sites. Five institutions (5/14) also duplicate search functionality in the primary navigation, either as a visible search field or via a magnifying glass icon that triggers a pop-up search interface.
8. **Library services:** Access to services such as interlibrary loan and instructional assistance typically appears through primary navigation menu items labeled "Services," "Find, Borrow, and Request," or similar variants. These services may also be accessed through links in the search interface area or in quick links sections within the featured content area.

Design Patterns Across Institutions

Modular & Spacious Layouts

All institutions employ modular structures with generous spacing between sections. This approach provides visual breathing room, limits simultaneous focal points, and reduces cognitive load, aligning with accessibility and usability principles identified in the literature review.

Strong Institutional Branding

Most homepages incorporate heavy institutional branding through consistent use of university colors as primary visual elements. This approach conveys institutional identity, credibility, and authority while reinforcing the library's connection to its parent institution.

Visual Hierarchy Strategies

Institutions employ varying approaches to establish visual hierarchy:

- **Image-driven designs** (CMU, Emory, UNCG): Heavy use of photography featuring people, campus architecture, and collections
- **Text-forward designs** (Columbia, NU, UMN): Typography and structural elements establish hierarchy with minimal imagery
- **Balanced approaches** (Duke, UNC-CH, UW): Moderate imagery combined with strong typographic hierarchy

Information Density

Homepage density varies considerably. Some institutions (UMN, USC, UNCG) present information-rich layouts with ten or more distinct sections, while others (Columbia, UWM) maintain minimalist approaches with seven sections. Both strategies have the potential to be effective when paired with appropriate visual hierarchy and spacing.

Innovative features worth considering

Enhanced navigation

- Fixed navigation bars (CMU, NU) maintain visibility during scrolling, improving access to primary navigation
- Combined university and library logos (Emory, UW, four institutions total) create unified institutional identity while conserving space

Advanced search functionality

- UNCG combines tabbed categories with a side menu, enabling filtering by both format and metadata field directly from the homepage

Hours display

- Truncated schedules (CMU, PSU) display current hours as clickable elements linking to detailed calendar pages, balancing immediate information with space efficiency

Interactive imagery

- Clickable images in the search area (CMU, UMN, USC, four institutions total) provide additional navigation pathways to hours, collections, or news content
- USC uses a magnifying glass icon to toggle search bar visibility, potentially reducing visual clutter

Accessibility and inclusivity

- UNCG provides a "Select Language" dropdown in the footer, enabling translation of homepage content into multiple languages
- PSU includes an "Acknowledgement of Land" statement in the footer

The environmental scan identified common design patterns and priorities across peer institutions. To validate whether these patterns align with Duke Libraries' actual user behavior and needs, usage data from the current Duke homepage was analyzed to inform design decisions with empirical evidence from Duke's specific user population.

Matomo Analytics

To triangulate findings from the literature review and environmental scan, usage data from Duke’s current library homepage was gathered and analyzed using Matomo web analytics for the 2025 calendar year.

Search Dominates User Behavior

Page Visits¹

If we want the DUL Homepage to surface the primary tasks users undertake on our websites, we can start by looking at the pages in the public site (Drupal) that receive the most traffic. Because we’re looking at individual pages, the actual percentages of total traffic are quite low, but we can explore the relative popularity of pages.

The top 10 pages (below) are visited in at least 1% of the total visits to the public site. The library homepage is the most popular single page, showing up in over 40% of visits. The next most popular site is the My Accounts portal page, which has a prominent link in the header and is included in about 5% of visits. Other popular pages are the Find Library Spaces page and the Library Hours page. (Note, however, that an overview of library hours shows up on the homepage and could be a significant reason for visits to the homepage.)

Label	Description of page	Unique Pageviews (Number of visits that included this page)	% of total visits that included this page
/	DUL Homepage	415,687	40.1%
/my-accounts	My Accounts	54,143	5.2%
/using/library-spaces	Find Library Spaces	39,134	3.8%
/about/hours	Library Hours	37,559	3.6%
/find	Search & Find Portal Page	31,559	3.0%
/rubenstein	RL Homepage	23,559	2.3%
/music	Music Homepage	14,785	1.4%
/find/journal-titles	Online Journal Titles	14,294	1.4%
/rubenstein/uarchives/history/articles/ narrative-history	Brief History of Duke University	13,353	1.3%
/lilly	Lilly Homepage	10,244	1.0%

¹ Note: this analysis excludes some high-activity pages that look like bot activity (~8% of total sessions). These pages have URLs that start with “/rubenstein/findingdb”, which is no longer a component of our website. This could include real hits from humans who just happened to get sent to a bad URL, but there are a lot of them, and the spike in activity from narrow regions of the world (e.g., Jakarta) suggests it may have been bots rather than genuine interest in a particular collection. They have been excluded from the page visits analysis.

Matomo is configured to disregard bot traffic overall, but in recent years bots have grown increasingly aggressive, deceptive, and capable of disguising themselves as real users. We believe most of the stats we have collected are from real users. Any bot traffic present in our analytics data is due to this deceptive behavior.

Search doesn't feature prominently in this type of analysis, despite the fact that Drupal has pages that are connected to search functions. Those pages are portal pages with embedded search boxes and typically have /find in the path. Those pages don't reflect the full magnitude of discovery-related traffic, though, because most people will use the search box on the library homepage or in the masthead navigation instead of narrowing to a search portal page.

The most popular search portal page, the general Search & Find portal page linked from our masthead navigation, only comes up in 3% of all visits. Online Journal Titles follows (1.4% of visits) and then the Article search portal (<1% of all visits). (Note: The Research Databases portal is inside the LibGuides platform and does not appear directly in this Drupal-based report. It appeared in almost 31k visits in 2025, so it is almost as popular as the general Search & Find portal page.)

Label	Description of page	Unique Pageviews (Number of visits that included this page)	% of total visits that included this page
/find	Search & Find Portal Page	31,559	3.0%
/find/journal-titles	Online Journal Titles	14,294	1.4%
/find/articles	Article Search Portal	8,637	0.8%
/find/ebooks	Ebooks Portal	6,447	0.6%
/find/theses-dissertations	Theses/Dissertations Search Portal	5,421	0.5%
/find/film-video	Film & Video Search Portal	2,888	0.3%
/find/newspapers	Newspapers Search Portal	1,230	0.1%
/find/scholarly	Duke Faculty Scholarly Work Portal	180	0.0%
/find/about	Not an active page	128	0.0%
/find/microforms	Microforms Search Portal	110	0.0%
/find/databases	Not an active page	21	0.0%
/find/databases/	Not an active page	5	0.0%

Because we have created search boxes in the most prominent locations of the website (the homepage and the global masthead), most users will interact with those boxes rather than seek out a more narrowly scoped search on a portal page. Those embedded search boxes, like the All Search on the library homepage and the search boxes within the search portal pages, take people directly to another site, like Summon or the Books and Media Catalog, and these activities won't show up in the Drupal pages list.

To tabulate how many people are using those embedded search boxes, we can look at Events tied to the specific search box of interest, or we can look generally at transitions from library.duke.edu to the other sites.

Events

- All Search Submit: 216,765 visits
- Catalog Search Submit: 34,991 visits
- Research Databases: 17,746 visits
- Articles Search Submit: 10,546 visits

Particular Events as a Percentage of Total Visits to the Homepage

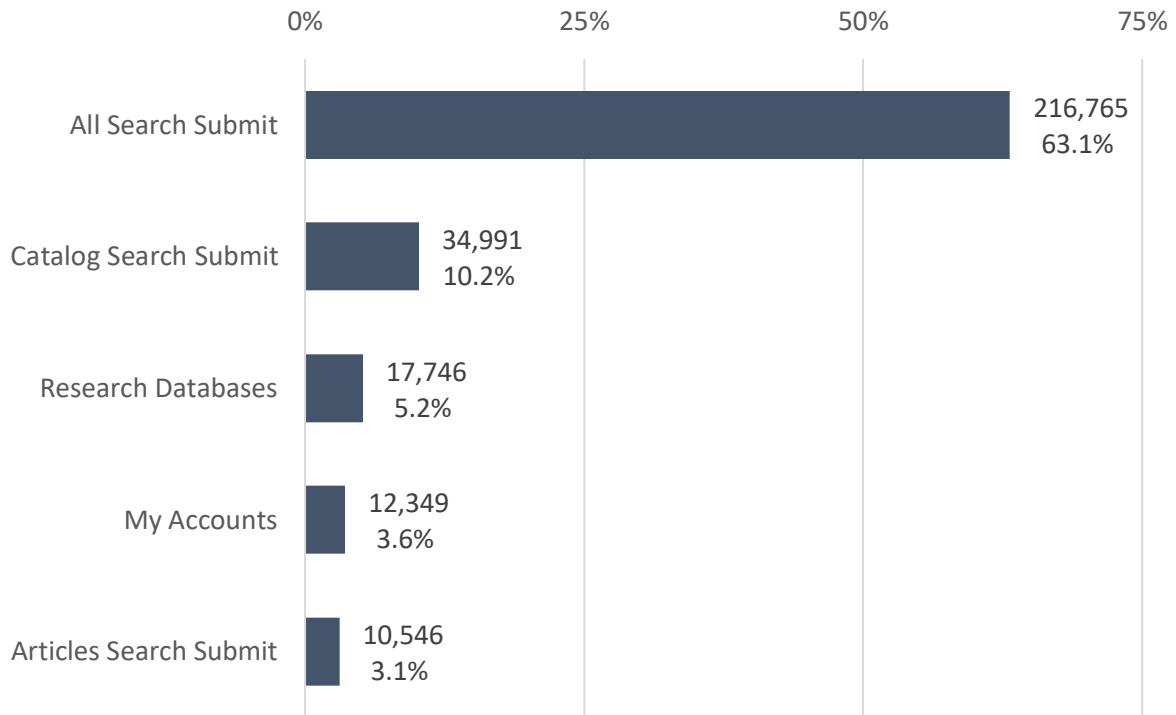


Figure 15 Matomo Library Homepage Event Data

Matomo data confirms that search activities occur during the majority of visits to the library homepage. The "All Search Submit" event (see figure 16) appears in over 216,000 (~63%) of the visits that include the library homepage, followed by "Catalog Search Submit" (see figure 17) at ~35,000 visits. Comparing the number of visits that include discovery-related events, search activities exceed even the My Accounts page for popularity. This usage pattern strongly supports positioning search as the central, most prominent feature on the redesigned homepage.



Figure 16 DUL Homepage All Search

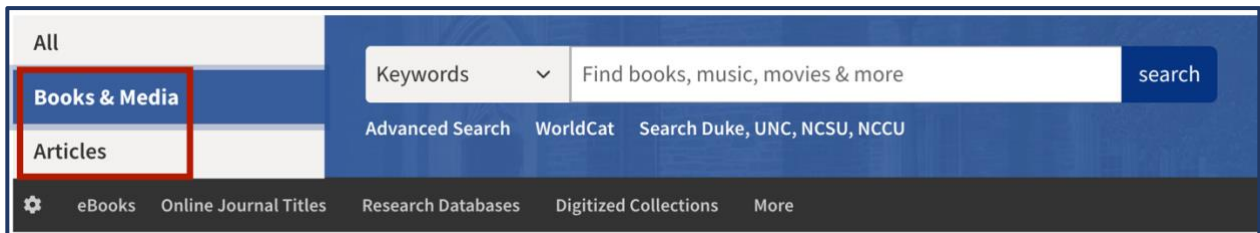


Figure 17 DUL Homepage Catalog Search

Account Management is a High-Priority Task

- My Accounts Portal traffic: 54,143 visits
- My Accounts Homepage Event: 12,349 events

As previously mentioned, across all of Drupal, the My Accounts portal page was included in over 54,000 visits in 2025, making account management the second-highest priority task after search. The "My Accounts" button in the masthead (see figure 18) recorded 12,349 events, placing it in the top five of the most common events on the homepage, higher even than article search. This validates the recommendation to place account access in a persistent, highly visible location such as the top-right corner of the primary navigation.

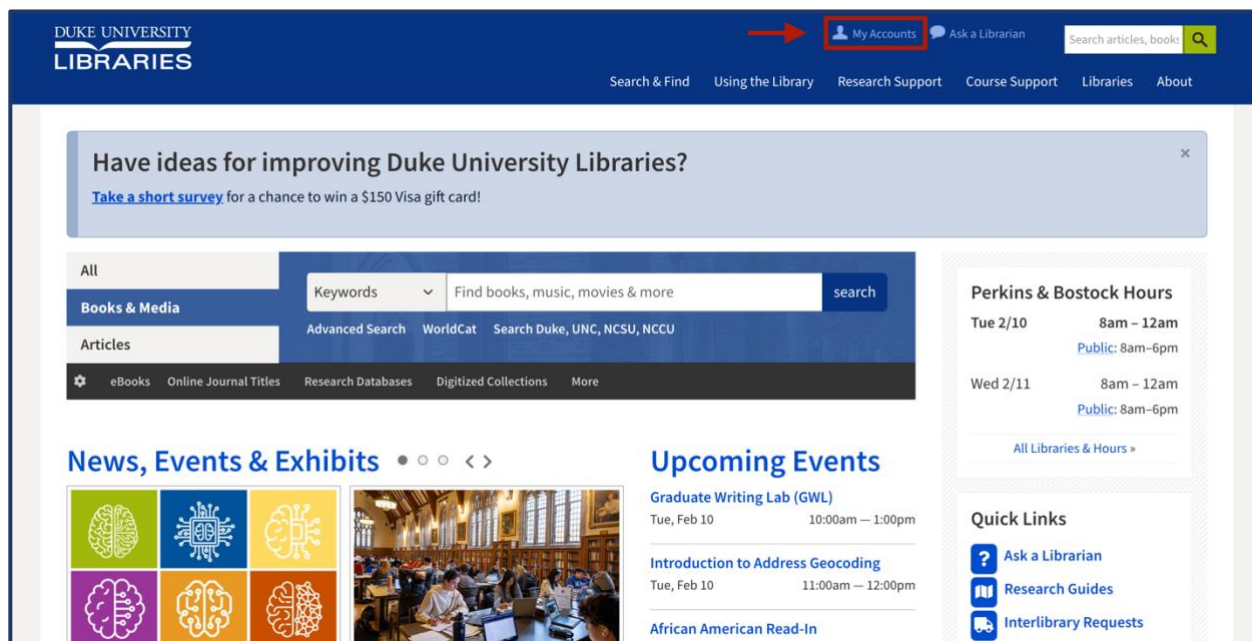


Figure 18 DUL Homepage My Account

Building-Specific Information Remains Highly Valuable

- Find Library Spaces: 39,134 visits
- Library Hours: 37,559 visits
- Rubenstein Homepage: 23,559 visits
- Music Homepage: 14,789 visits
- Lilly Homepage: 10,244 visits

Building-specific information is spread across various pages in Drupal. While the My Accounts portal page is the second-most popular single page in Drupal, combining various pages related to visiting or navigating our buildings highlights this information need as a common driver of website traffic. As mentioned previously, the library hours page may underestimate the number of people looking for this information, since the hours are displayed prominently on the library homepage.

In addition to looking at the overall usage of these building-specific pages in Drupal, we can review the number of times users transition from the homepage to a building-specific page. In 2025, there were just over 18,000 transitions from the homepage to a page in the "Using the Library" section of our website, which includes our Find Library Spaces tool. Another ~5,600 transitions took users from the

homepage to the hours page, confirming that some of the Library Hours traffic does originate with the homepage. Account access and building-specific information rank just below discovery in terms of the most popular transitions from the homepage.

Device Usage Patterns

Device type data from 2025 for all library website visits reveals that desktop computers remain the dominant access point for the library website, accounting for 869,329 visits (84% of total traffic). Smartphones generated 158,859 visits (15% of traffic), while tablet usage was minimal at 5,417 visits (0.5%).

The ~159,000 smartphone visits demonstrate that a small user population, approximately one in seven visitors, accesses library services through mobile devices and expect a fully functional mobile experience. While the literature review emphasizes mobile responsiveness as a foundational design requirement, the relatively modest mobile usage at Duke (15%) suggests that desktop remains the primary access point for most library tasks. However, this finding does not diminish the importance of mobile-responsive design, as the specific tasks mobile users perform, such as checking library hours or locating contact information, may be critical even if less frequent. Further research is needed on this point, but mobile responsiveness remains a best practice for accessibility standards.

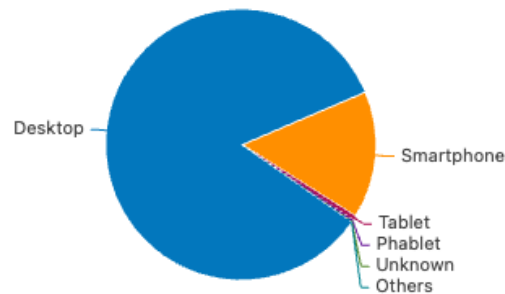


Figure 19 Device type data

Device Type	Visits
Desktop	869,329
Smartphone	158,859
Tablet	5,417
Phablet	2,140
Unknown	378
Feature phone	247
TV	45
Portable media player	16
Console	9
Wearable	2
Totals	1,036,442

Duration of Visit

The average duration of a visit that included the library homepage² in 2025 was approximately 307 seconds (5 minutes 7 seconds). This is considerably longer than the average duration across all visits to the library website, which was 175s (2 minutes 55 seconds). Looking at visit duration by week (Figure 21), we also see that average duration for visits to the homepage stays fairly stable across the entire year, while visits to the library website writ large (Figure 22) see notable declines in duration over the summer and winter breaks. This baseline measurement provides context for the redesign’s goals and will serve as a benchmark for evaluating post-implementation effectiveness.

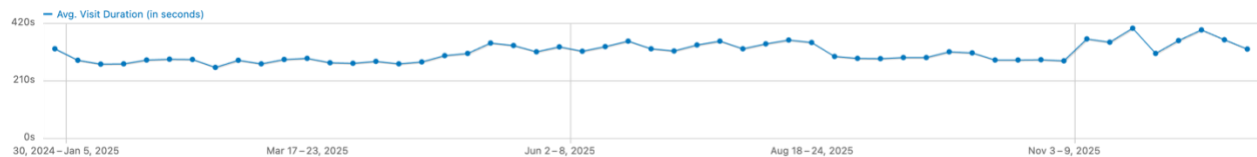


Figure 20 Average visit duration for visits to the homepage



Figure 21 Average visit duration across the entire library website

While visit duration alone cannot determine task efficiency, this metric suggests that users whose visit includes the homepage are spending considerable time on the library website, compared to users whose visits do not include the homepage. A more streamlined homepage with clearer visual hierarchy and more prominent placement of high-use features (as recommended throughout the report) may reduce the time required for users to orient themselves and locate resources. Measuring visit duration after the redesign will help assess whether the new design successfully facilitates faster task initiation.

Matomo Findings Summary

The Matomo analytics data validates design priorities identified in the literature review and environmental scan. Search dominates Duke homepage interaction, account management is the second-highest priority task, followed by building information (library space exploration, hours, and library-specific websites). These patterns are consistent with peer institutions and UX research literature. The 15% mobile usage (159,000+ visits) somewhat contradicts the literature, but mobile-responsive design is still warranted because of accessibility standards, while the ~5 minute average visit duration suggests opportunities for improvement through cleaner visual and content hierarchy.

Student Advisory Boards

Duke's Assessment and User Experience Strategy (AUXS) department maintains Undergraduate and Graduate Student Advisory Boards that convene multiple times each semester to provide insight into student experiences and perspectives regarding library services. To complement the secondary research conducted for the homepage redesign, AUXS facilitated two focus groups with these advisory boards in

² These data were isolated by creating a segment where page URL is the library homepage. According to [Matomo documentation](#), segmentation happens at the visit level, so this segment will capture any visit that includes a visit to the homepage, and the “visit duration” represents the duration of the full visit, including all pages viewed.

2025 and 2026: a card sort exercise to understand content prioritization and a wireframing exercise to capture student design preferences and critiques of the current homepage.

October 2025: Content Prioritization Card Sort

In October's meeting, students organized seven common homepage sections (identified through the environmental scan) from most important (positioned at the top of the page) to least important (positioned at the bottom of the page). This activity served two purposes: identifying where overlap occurred between student perception and the environmental scan and informing content prioritization decisions for the redesigned Duke Libraries homepage based on direct student input.

Sections students were asked to organize:

- News & Events
- Library Hours
- Quick Links (Databases, Journals, Research Guides, Interlibrary Loan, etc.)
- Quick Search Bar (search for books, articles, journals, etc.)
- Featured Special Collections
- Room Reservations
- Get Help

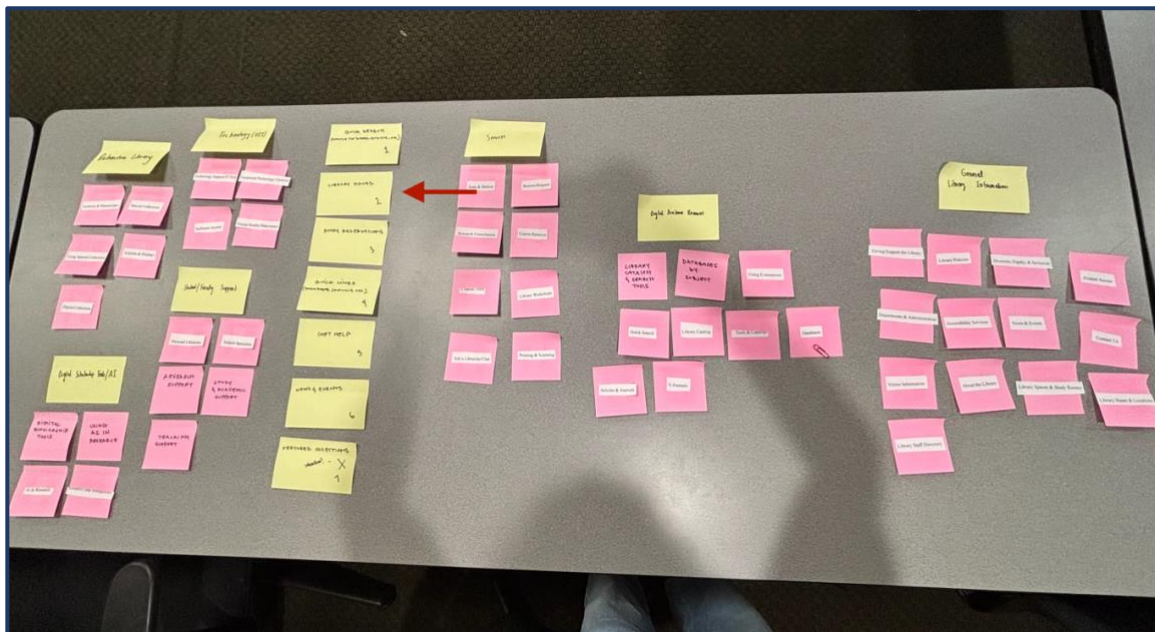


Figure 22 Card sort activity

High-Priority Sections (Strong Consensus)

- **Quick Search Bar:** The Quick search bar emerged as the highest priority across all three groups. Students emphasized that search is their most frequently used feature and should occupy the most prominent position on the homepage. This finding aligns with both the environmental scan observation and Matomo analytics data showing that search accounts for over 60% of homepage interactions.

- **Library Hours:** The library hours ranked consistently high across all groups (positions 2-4/7), validating this feature as essential information that students seek frequently. All groups positioned hours in the top half of their priority rankings.
- **Room Reservations:** Room reservations also ranked consistently high (positions 1-4/7) across groups, with multiple groups noting that room booking is a heavily used and a pragmatic feature that should be highly visible on the homepage.

Low-Priority Sections (Strong Consensus)

- **Featured Special Collections:** Special collections ranked lowest across all three groups (positions 6-7/7). Students consistently noted that while special collections may appeal to donors, visiting scholars, or niche academic interests, this content is rarely if ever relevant to general student needs. One group suggested that if included, featured collections could be combined with news and events or positioned as a subsection rather than a standalone prominent feature.
- **News & Events:** News and events received generally low priority rankings (positions 5-6/7). Students characterized library news and events as niche content that serves specific audiences rather than general library patrons. Multiple students indicated they do not use or need this section for typical library tasks.

Divergent Finding

- **Quick Links:** Quick links showed variation in rankings, appearing in positions 4-5/7 across groups. However, one group provided valuable design guidance: they suggested positioning quick links directly below the search bar rather than off to the side (see figure 23), noting that quick links complement search functionality and should be visually associated with the search interface. In addition to this group's comment, many of the library homepages analyzed in the environmental scan also placed their quick links in a prominent location, such as below the main library search.
- **Get Help:** The get help section showed the widest variation in priority rankings (positions 3-7/7). One group ranked it third, reasoning that immediate access to assistance is critical when users encounter problems. However, another group suggested placing help features at the bottom of the page, arguing that users typically exhaust self-service options before seeking assistance. This divergence may suggest that help access should be provided through multiple pathways: prominent placement for discovery (such as a persistent chat widget) combined with additional help links lower on the page for users who have scrolled through other content.

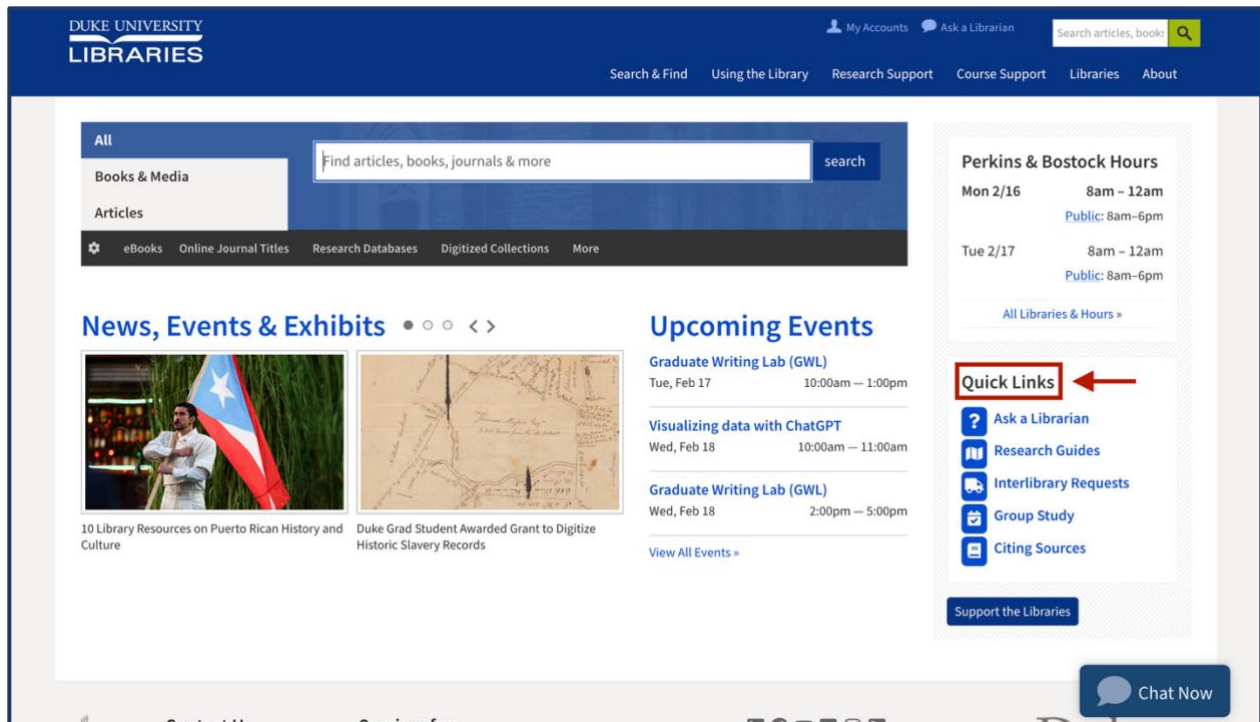


Figure 23 DUL Homepage Quick Links_Feb 2026

Recommended Content Organization Based on Focus Group Findings

1. Quick Search Bar (Top/Primary Position)
2. Quick Links (Immediately Below Search Bar)
 - a. Library Hours
 - b. Room Reservations
3. News & Events
4. Special Collections
5. Get help – *should also be placed somewhere prominent*

Design Implications

The card sort findings reinforce several key recommendations from the literature review and environmental scan:

- **Search centrality:** Student prioritization of the search bar as the top feature (across all three groups) validates positioning search as the primary, most prominent homepage element, consistent with Matomo data showing 60%+ of interactions involve search.
- **Pragmatic services first:** Students explicitly emphasized wanting “pragmatic, most-used things at the top of the homepage,” supporting the recommendation to prioritize functional services (search, hours, room reservations, quick links) over promotional content in the visual hierarchy.
- **Quick links prominent placement:** Student feedback to position quick links directly below the search bar aligns with the environmental scan findings that 10 of 14 peer institutions place quick links in prominent, centralized locations near the search interface.
- **Minimize promotional content:** Consistent low ranking for news, events, and special collections confirm these elements should occupy secondary positions below task-oriented features, as students characterized them as “niche content” rarely relevant to general library needs.

February 2026: Wireframing Exercise

In the February 2026 meetings, students were asked to wireframe their “ideal library homepage”. They weren’t given any recommendations or biased on how to design their wireframes. They occurred organically. Individually, they spent approximately 15 minutes sketching wireframes, followed by group presentations and discussion. This process was highly comparative, with students commenting on similarities and differences between their wireframes and critiquing the current DUL homepage design (see figure 24), which was displayed on a screen for reference.

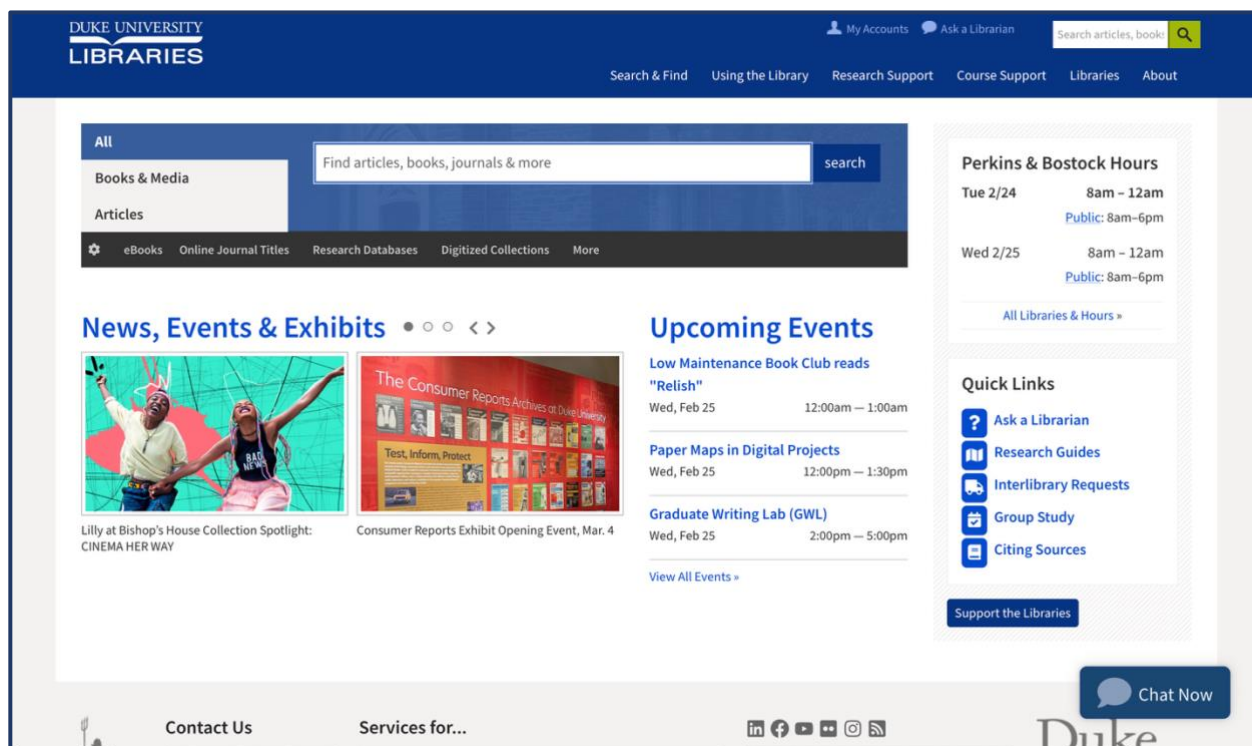


Figure 24 DUL's homepage - Feb 2026

Findings: Strong Alignment with Previous Research

Seven major themes emerged from the wireframing exercise which validated and extend findings from the literature review, environmental scan, card sort activities, and Matomo analytics.

1. Suggestion: Search should be central & simple
 - a. Grad: “I like Columbia University because the search is so central when you land on the page. It’s basically just the search engine, which is usually why I’m going to the library website”
 - b. Grad: “You want to get on and immediately have the opportunity to find what you need”
 - c. Undergrad: “The search bar should be huge and the main feature”
 - d. Undergrad: “It should be a big bar right in the center at the top when you first land on the page”

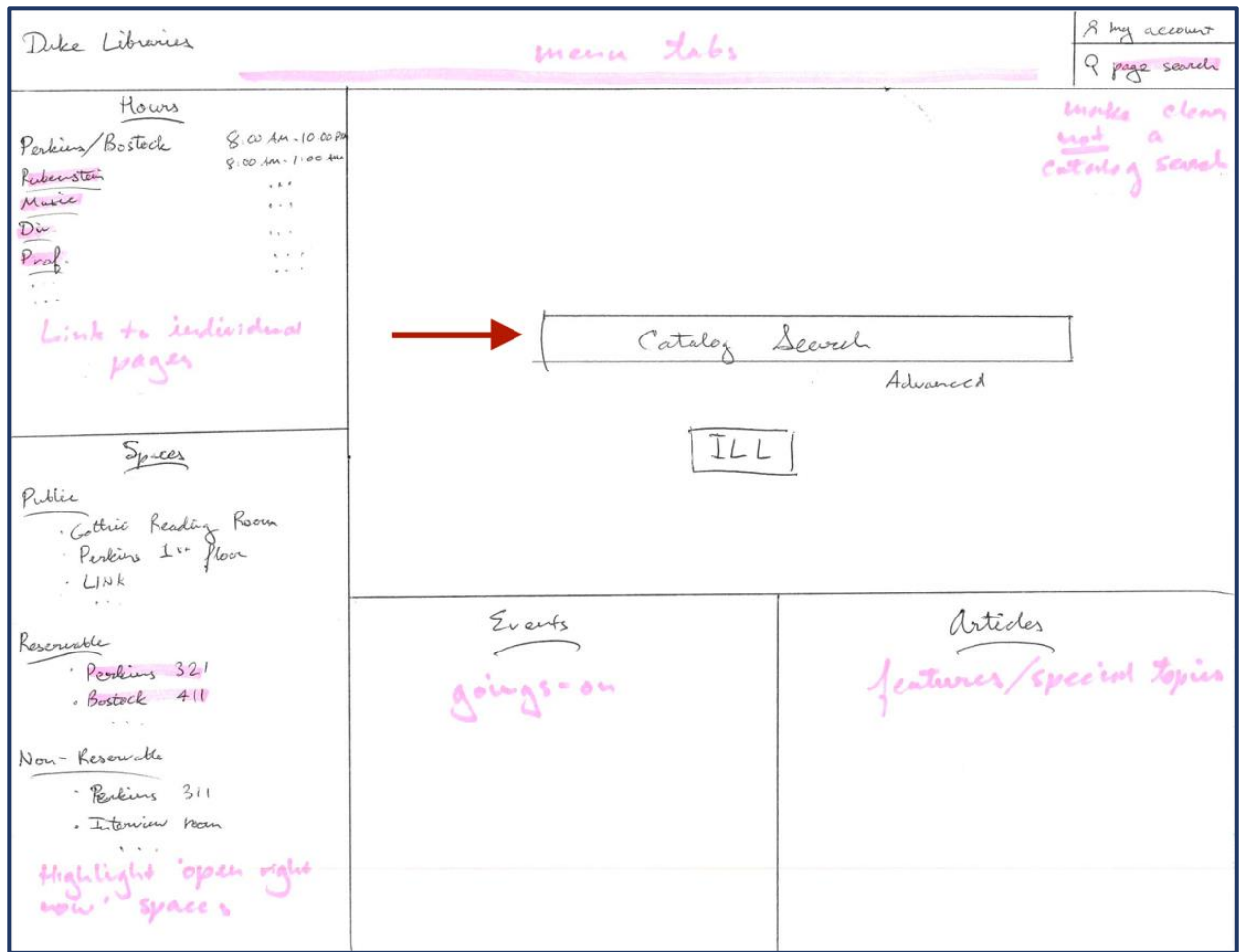


Figure 25 Student wireframe_search is central

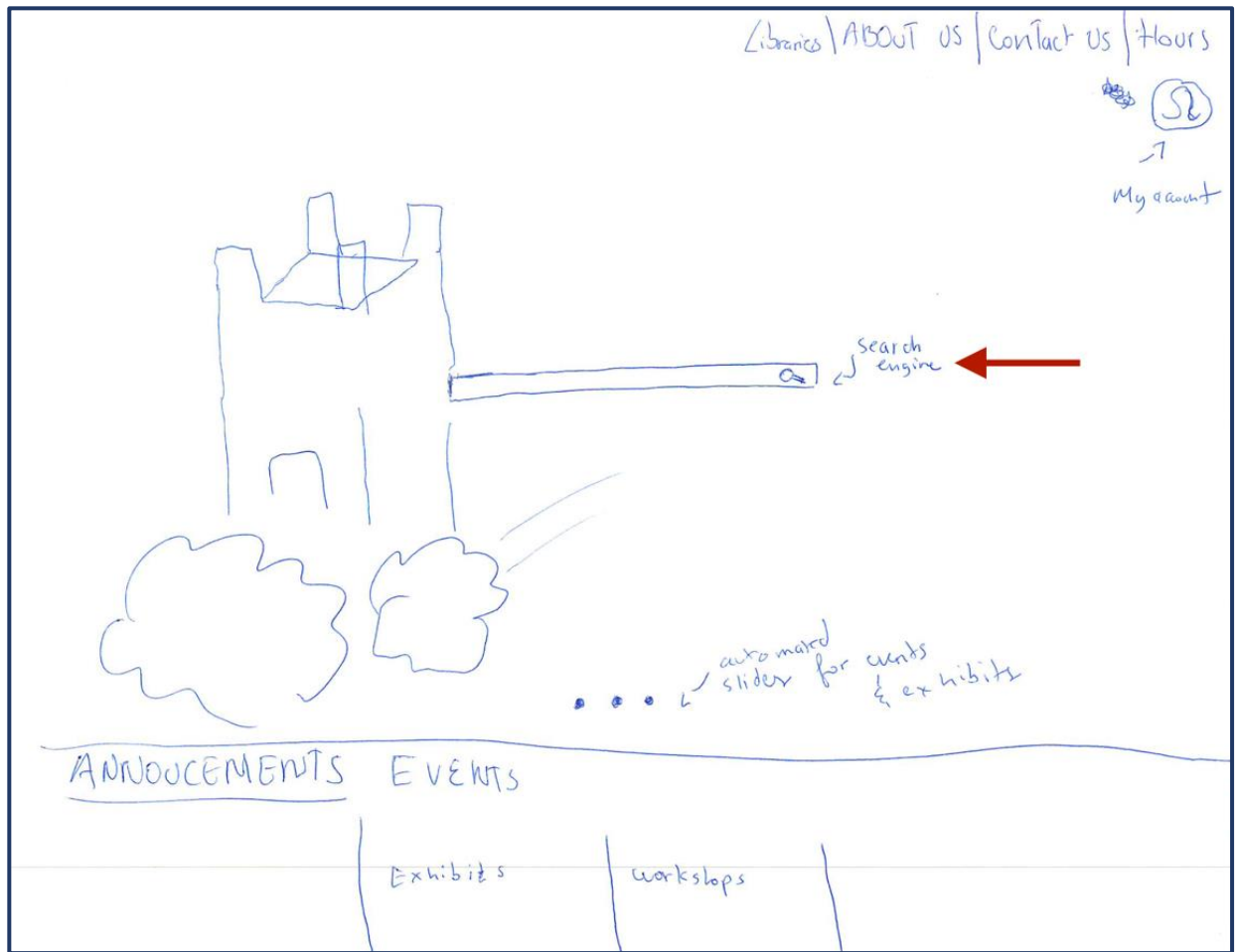


Figure 26 Student wireframe_search is central

2. Critique: The current homepage is cluttered & overwhelming
 - a. Grad: "There are so many words on the screen and a lot of it feels very repetitive"
 - b. Grad: "So much of what is on the page is blue, which makes everything look like a link that is going to take me to another page, that's confusing"
 - c. Grad: "The news and events sections are too close, and so is the other content. Just feels overwhelming"
 - d. Undergrad: "There is so much hitting you at once, my eyes don't know where to go or what to focus on"

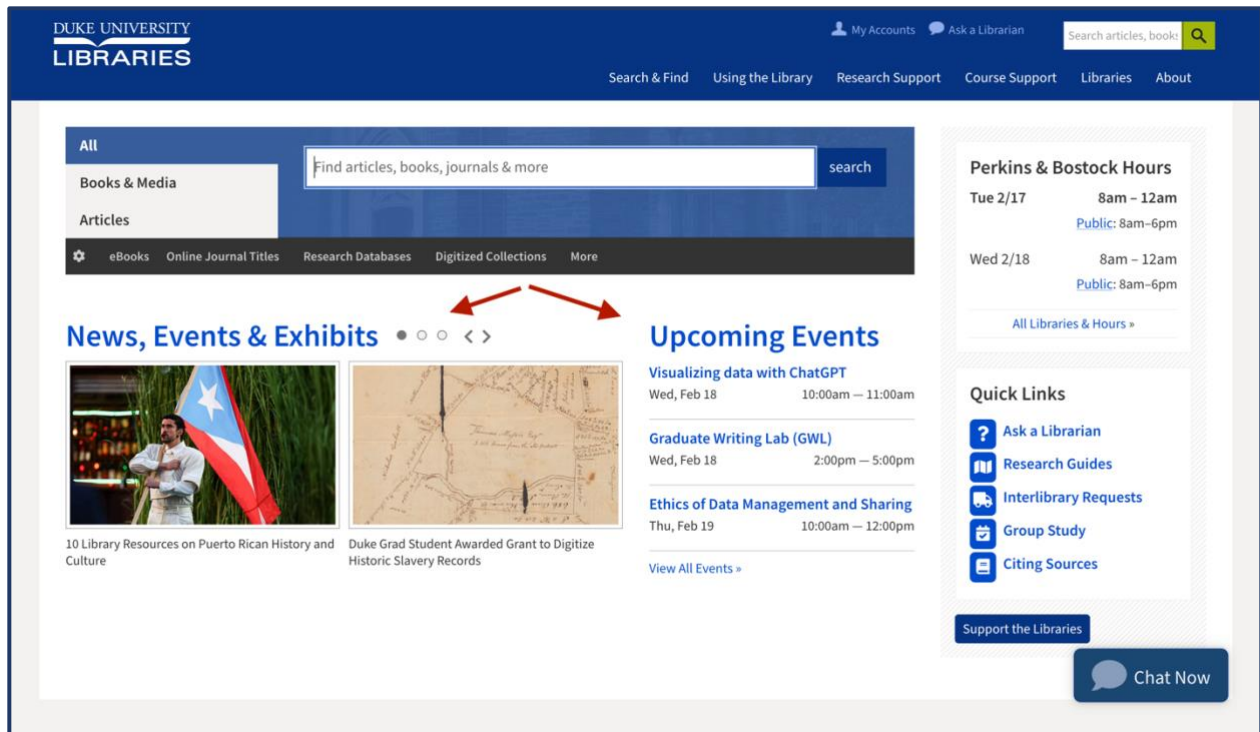


Figure 27 DUL homepage_cluttered content and blue text

3. Suggestion: The homepage should be task oriented & "I want to" focused
 - a. Grad: "It should be like, if you want to find a book, click here. Because when you go onto a website you have an action in mind"
 - b. Grad: "I agree with their comment, the language should be verb oriented rather than noun based"
 - c. Undergrad: "First year students are thinking, I'm going to the library website to find a book, get a tech rental, find a room... I just need to do this one thing"

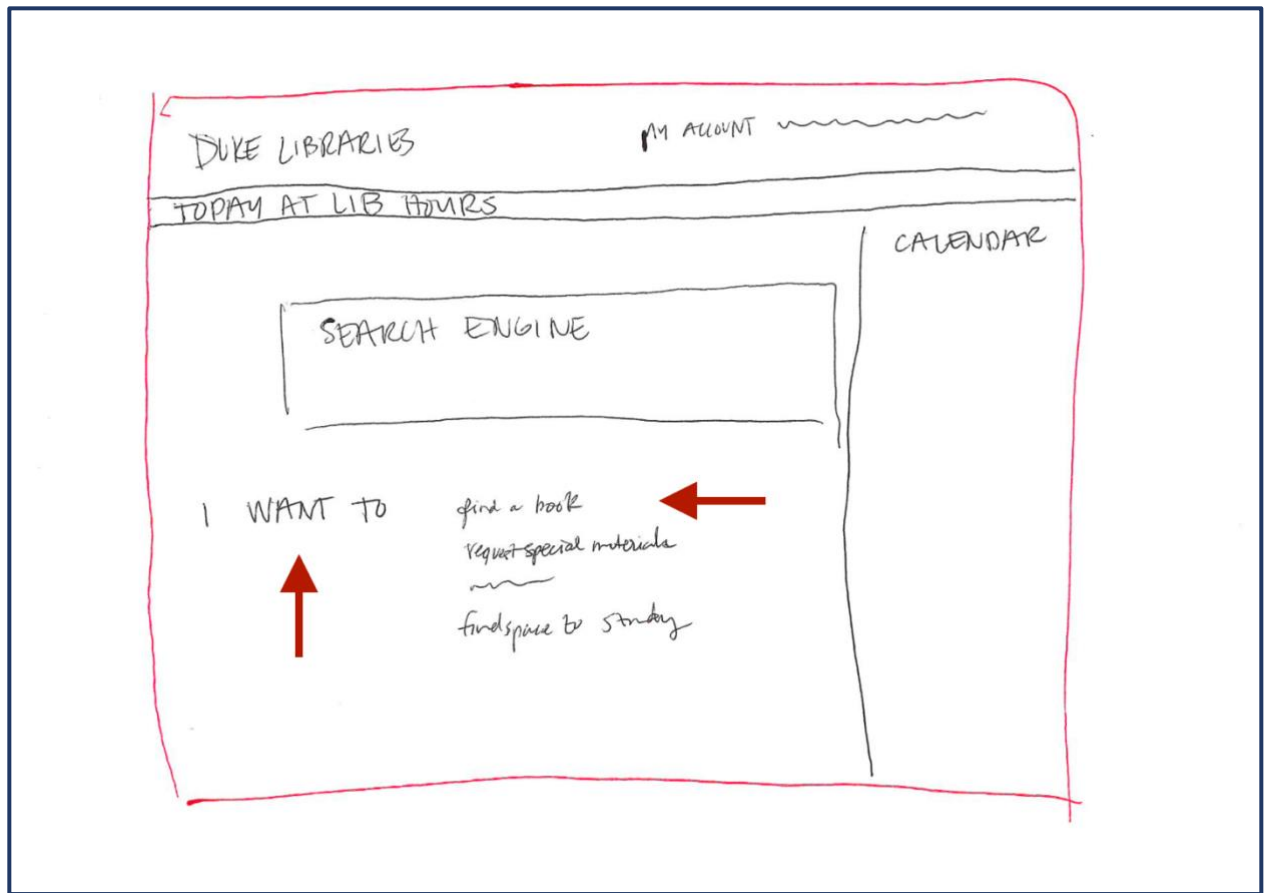


Figure 28 Student wireframe_task oriented features

4. Suggestion: Hours should prominent
 - a. Grad: "I feel like im always trying to figure out if the library is open. For some reason I'm incapable of remembering what days it is and what days it is not"
 - b. Grad: "I like that it has the hours, but it should be more visible"
 - c. Undergrad: "The homepage should have the other library hours on it, not just the Perkins"
 - d. Undergrad: "The hours at the top are very small, and should be bigger because they are very important"

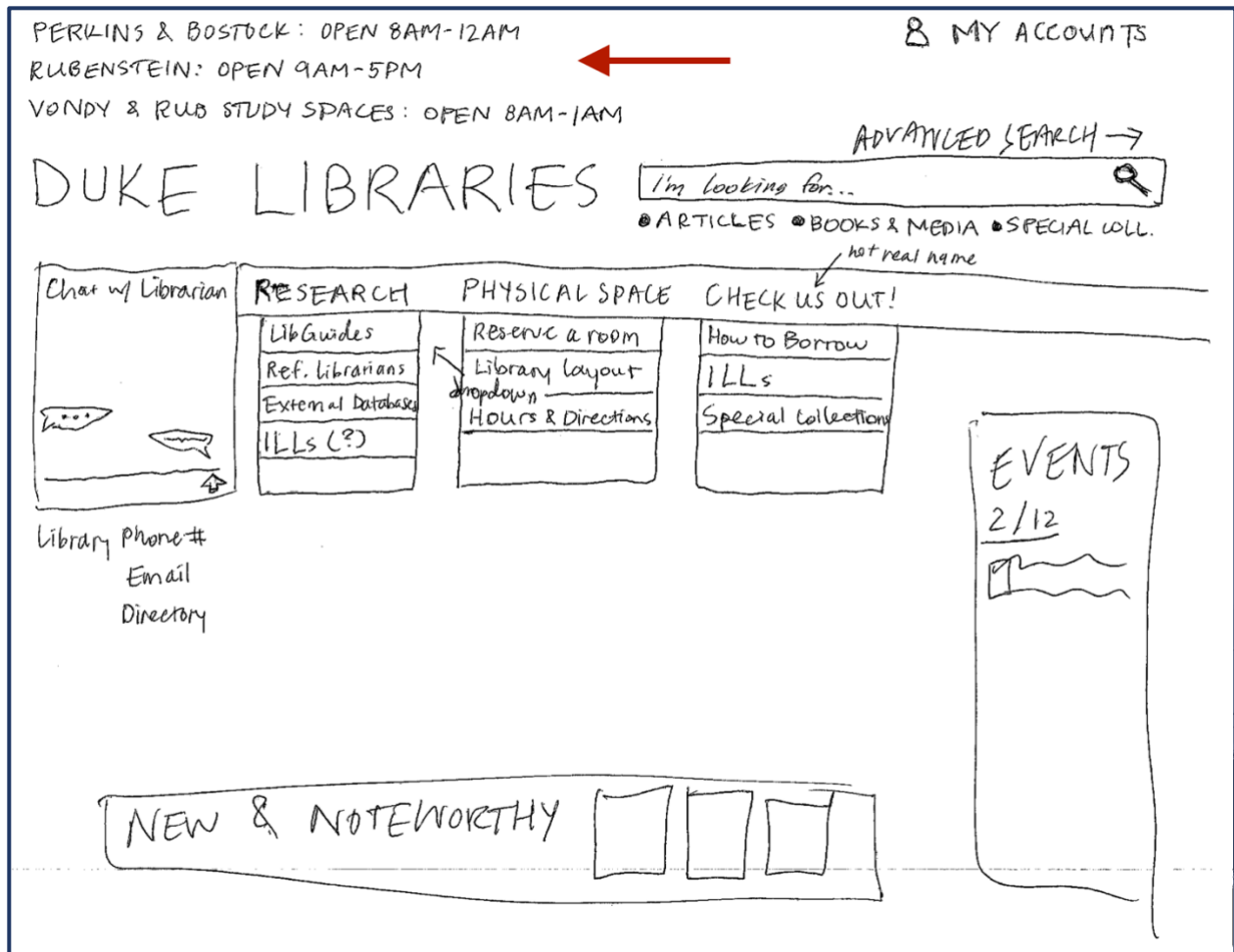


Figure 29 Student wireframe_hours are prominent

5. Critique: News/Events/Exhibits take up too much space
 - a. Grad: "News and events and exhibits I assume are rarely used. I would wonder how many people ever actually click on that, I bet it's pretty low"
 - b. Undergrad: "Put the upcoming events at the bottom, no one looks at those. Organize the content based on priority"
 - c. Undergrad: "The news photos of the events are very large. The search bar should take up that space instead"

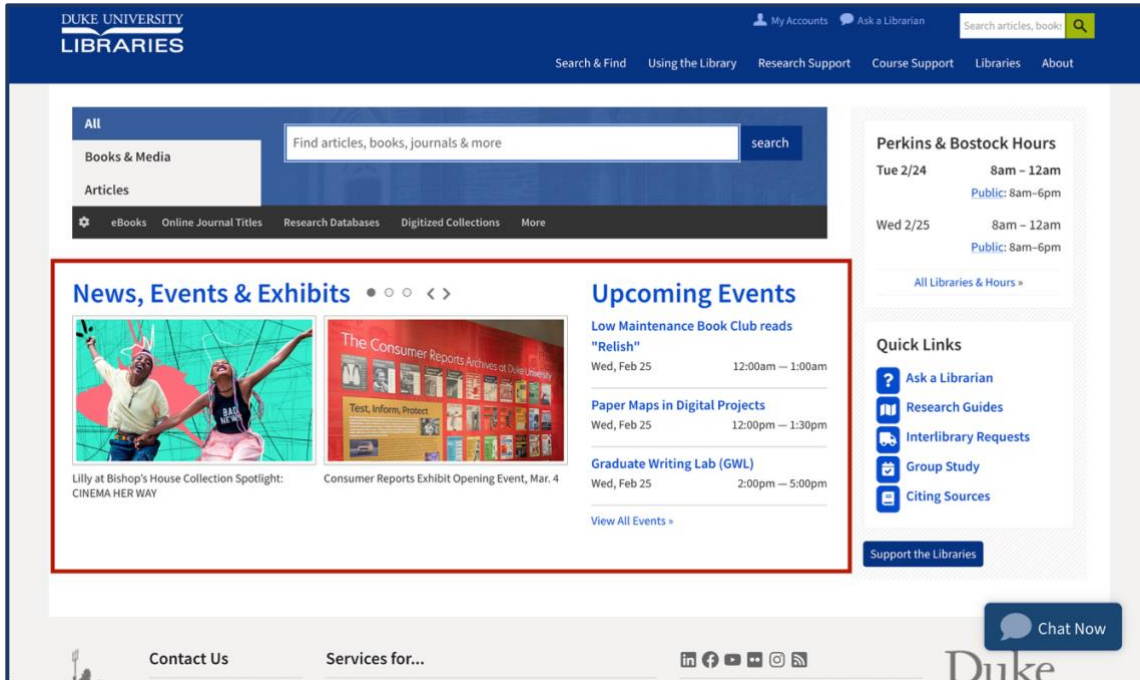


Figure 30 News, Events, and Exhibits on current homepage

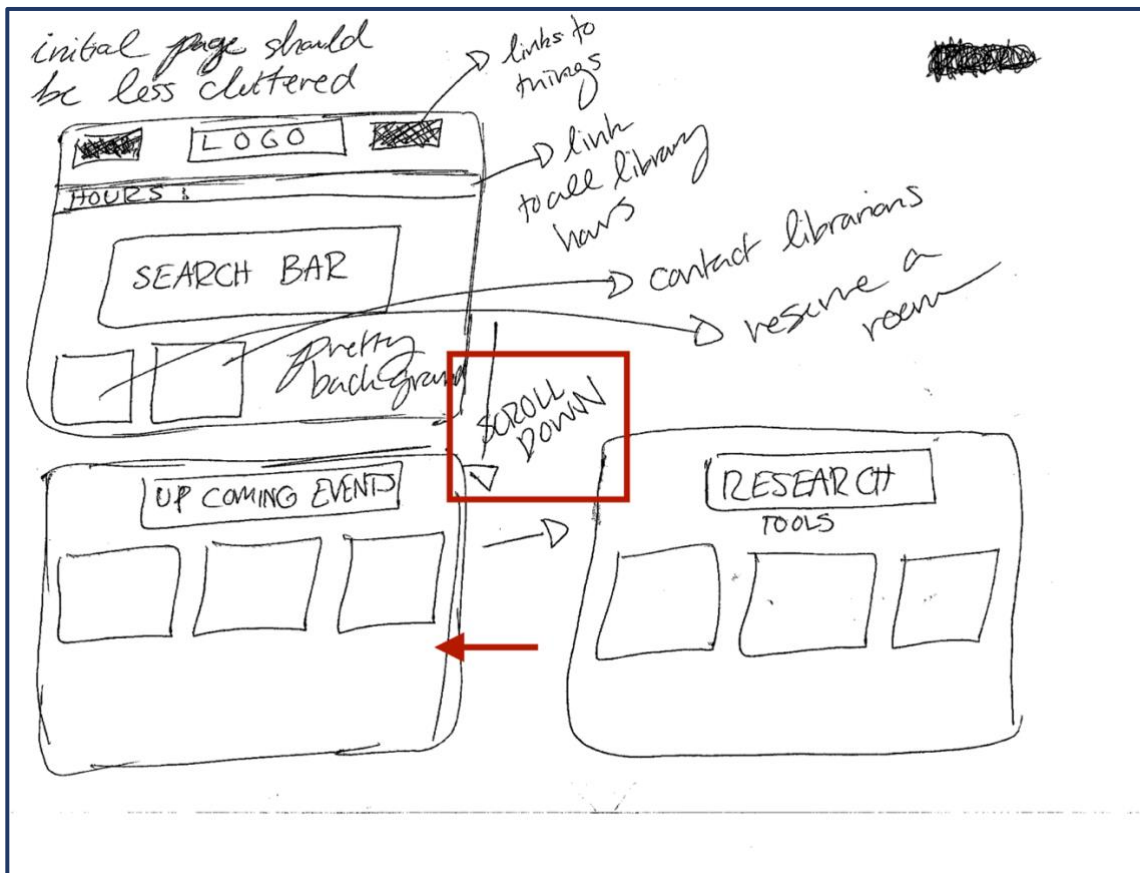


Figure 31 Student wireframe_deprioritized news & events

6. Suggestion: Don't incorporate AI chatbots
 - a. Grad: "I am morally against using AI for any type of work, but especially for academic purposes"
 - b. Undergrad: "I think people would use the chat window less if they know they're talking to an AI chatbot. Chatbots are generic"
 - c. Undergrad: "I ask specific questions about resources. AI wouldn't know how to answer those."
 - d. Undergrad: "The library is not just a database, it's a community. AI would diminish librarians' standing and that interpersonal connection"
7. Suggestion: Advanced Search should have inline access
 - a. Grad: "There should be a caret on the main page for advanced search, and you shouldn't have to leave the main page to do the advanced search"
 - b. Grad: "I use the advanced search more than the all search, so it would be nice to be more easily accessible"

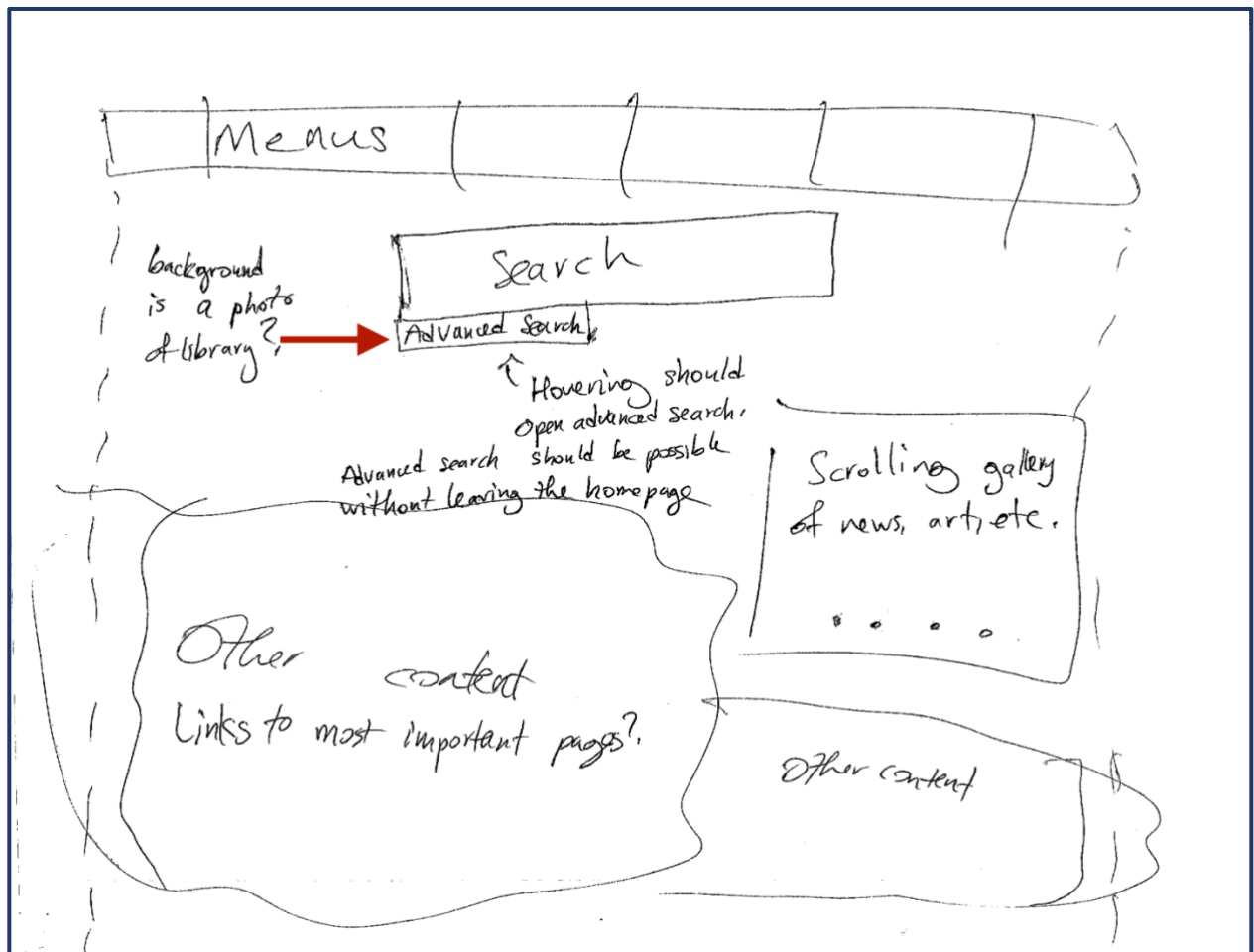


Figure 32 Student wireframe_advanced search

Conclusion

The combined findings of the literature review, environmental scan, Matomo analytics, and student focus groups provide converging evidence for an effective academic library homepage design approach. This mix-method research demonstrates that successful library homepages prioritize task completion over promotional content, emphasize search functionality, and maintain clear visual hierarchy.

Key findings across all research methods

Search emerges as the unequivocal priority. The literature review identified search as essential for task initiation, the environmental scan showed all 14 peer institutions positioning search as the primary homepage feature, Matomo data confirmed that search accounts for over 60% of Duke's homepage interactions, and student focus groups unanimously ranked search as their top priority. This convergence provides strong empirical support for positioning a unified search bar as the central, most prominent homepage element.

High-demand services require persistent visibility. Account access, library hours, and room reservations consistently appeared as critical features across all data sources. The environmental scan revealed standardized placement patterns for these features, Matomo analytics confirmed heavy usage, and students emphasized the need for "pragmatic, most-used things at the top of the homepage."

Promotional content serves a secondary audience. News, events, and special collections ranked consistently low in student priorities and appeared less prominently on peer institution homepages. While these elements might support institutional goals, the research indicates they should not compete with task-oriented features for prime homepage real estate.

APPENDIX A: Literature Review

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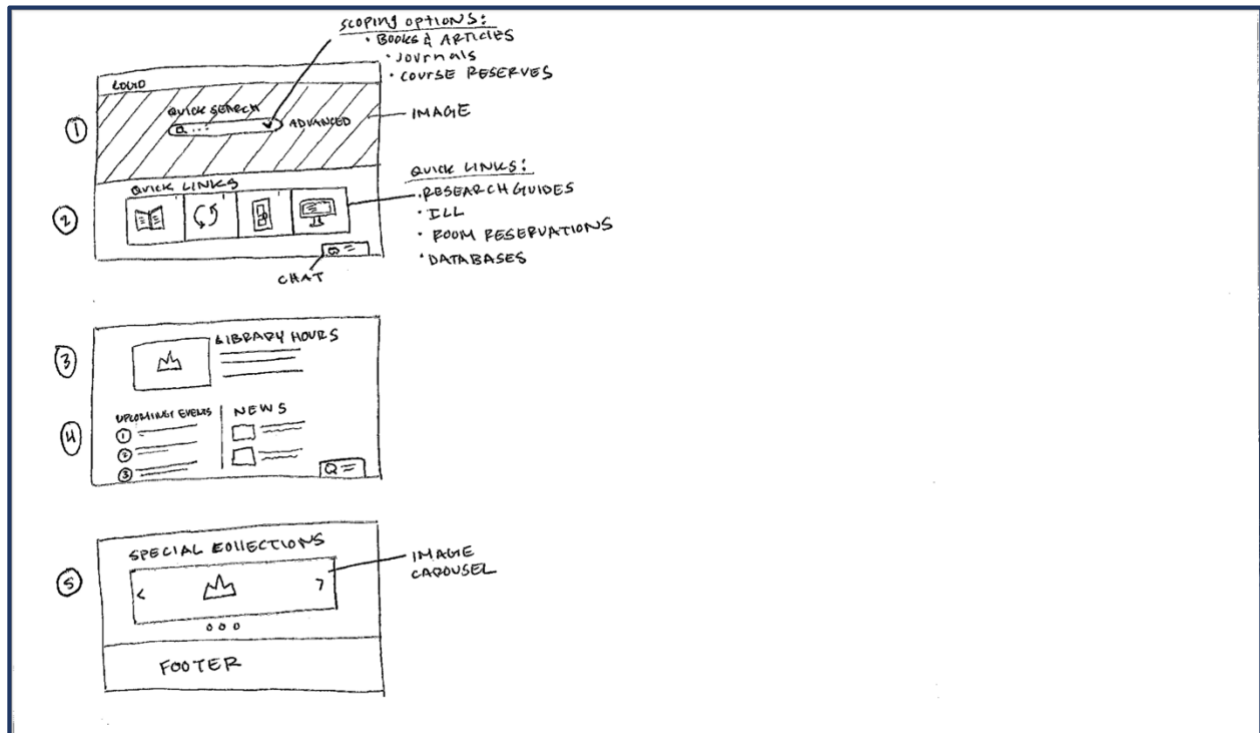
APPENDIX B: Environmental Scan Slides

[Environmental Scan Library Homepage Screenshots](#)

[Lily Homepage Design Guidelines](#)

APPENDIX C: Wireframes

Researchers Sketch Wireframes – based on recommendations (prior to AI iteration seen below)



Researchers Figma Wireframe – based on recommendations (prior to AI iteration seen below)

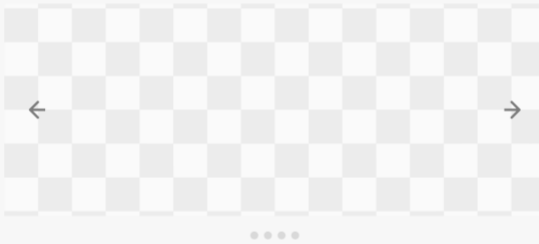
SEARCH FOR

Articles ▾
Advanced Search

I WANT TO

Find Libraries Open Now
Borrow, Request, Renew
Get Research Help
Reserve a Room in the Library

EVENTS & WORKSHOPS



NEWS

News Title
News Title

View all News

ChatGPT Wireframe – prompted with only the recommendations

The researcher did not upload any prior wireframes or data, only the recommendations listed in this report.

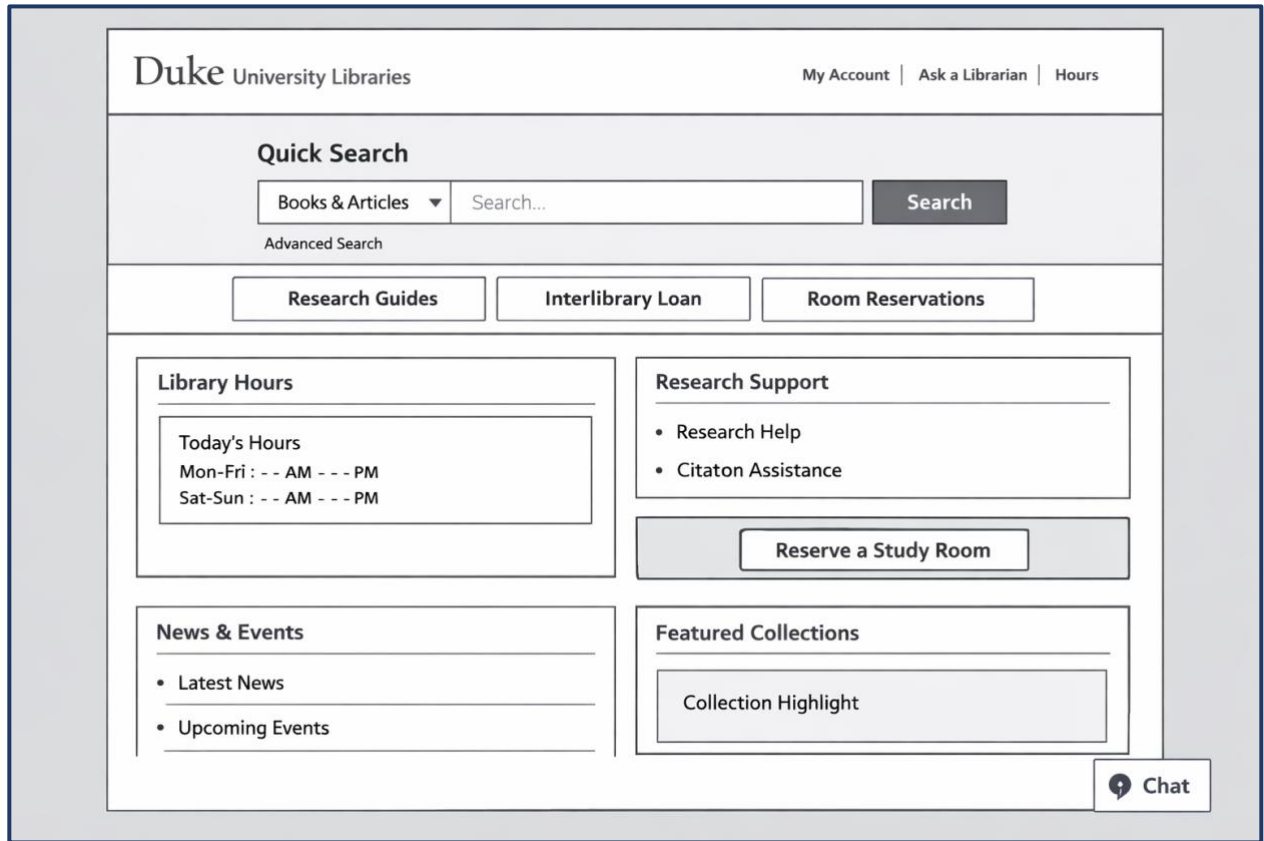


Figure 33 ChatGPT wireframe - iteration 1