

Revised Information Architecture and Analysis

University of Baltimore Law School Website

1.	EXECUTIVE SUMMARY	. 2
2.	APPROACH	. 3
	2.1. Objectives	3
	2.2. BACKGROUND	3
	2.3. METHOD	3
	2.4. ANALYSIS	5
	2.5. TOOLS	6
3.	CARD SORT	. 7
	3.1. METHODOLOGY	
	3.2. Participants	
	3.3. Results	
	3.4. Analysis	8
4.	FINDINGS AND RECOMMENDATIONS	. 8
	4.1. REVISED CONTENT MODEL	8
	4.2. Organization Navigation	8
	4.3. SEARCH AND CATEGORIZATION	
	4.4. Other Recommendations	15
5.	CONCLUSION	15
6.	REFERENCES	15
ΑF	PPENDIX A: VISUAL INFORMATION ARCHITECTURE	. 1
ΑF	PPENDIX B: OUTLINE INFORMATION ARCHITECTURE	. 1
ΑF	PPENDIX C: SITE MAP	. 5
ΑF	PPENDIX D: CARD SORT RESULTS	. 6

1. Executive Summary

This study examines the Information Architecture (IA) of the University of Baltimore Law School website. The objective of this study is to critically examine the content organization of the website and provide summary recommendations toward making it easier for visitors to orient themselves, navigate the site, and find what they are looking for. To that aim, we present a content organization derived through IA best practice and user validation. Wireframes accompany specific observations and recommendations.

A summary of major recommendations follows:

1.1.1.1 Observations	1.1.1.2 Recommendations
1. Navigation – The breadcrumb navigation is very helpful for user orientation. However, path is not reflected uniformly via cues across the three menu bars on the page. That is, in some cases a menu item triggers expansion of the right page menu and in other cases not. And with so many menus it is difficult to remember where to find previously found information.	Merge categories where possible. Limit menus to two, promoting pages that users search with high frequency to the top right menu. Integrate role-based categories with functional categories in the main menu. Use drop-down menus to increase the amount of usable space on the page.
2. Navigation – Research shows that users prefer navigation that is left justified, left aligned menus, as opposed to right aligned (Kalbach and Bosenick, 2003; Nielsen 2008).	Move sidebar navigation elements to the left side of the page.
3. Navigation – The third level navigation is difficult to navigate because of the large number of items.	Place second level navigation in a drop down menu underneath first level navigation. Place third level navigation items in a left navigation panel. Additionally, omit redundant and unnecessary items.
4. Organization – Too many pages act as menus and users must click through several to get to content. For example, the academic enrollment page requires you to click a link to a registration page containing the same sub-menu that was on the enrollment page but no additional content.	Reduce the number of pages functioning strictly as menu pages by adding a rollover effect to the top navigation bar to make sub-categories findable without clicking through to a secondary menu page. Clicking on a second level menu category in the left navigation panel exposes third level categories.
5. Orientation – Page URLs with the form as template.cfm?page=762 do not support the user's ability to know where they are in the site.	If possible, enable URL re-writing so that URLs indicate content location in site structure.
6. Labels and content categorization – Page types and categories may be used to help recommend related content to users.	Categorize and label pages by type (e.g., form, event, news), media, and topic. Annotated content can be used to enrich pages. For example, if someone is looking for a student form but searches on and finds faculty forms, it would be useful to provide links from faculty forms to other types of forms. Similarly, someone interested in registering for classes may be also interested in related content such as course schedules.
7. Search – Custom Google search results are difficult to read and interpret. Page title information is useful, though, no matter where pages exist in content hierarchy, titles are generally prefixed with "University of Baltimore Law School >> page title".	Labeled content categories (as above) can be used to annotate pages and provide additional context. Standardize layout and template of search results to the rest of the site.

2. Approach

2.1. Objectives

The purpose of this study is to:

- Propose an information architecture that better supports user orientation, navigation, and route-finding;
- Make concrete recommendations to that end.

2.2.Background

This section includes general information about the University of Baltimore Law School website and users.

The University of Baltimore website is a medium-sized site that serves content to a variety of user roles; visitors, faculty and staff, current and prospective students, and alumni. The site provides comprehensive information about the University Law School including facilities, programs, staff, etc. A fair amount of content is frequently edited and new content geared toward current faculty and students including upcoming events, seminars, and class information.

The site administrators post monthly Google reports for general statistics, top-level navigation areas, and specially requested pages (http://law.ubalt.edu/template.cfm?page=1138). Reports go back as far as the launch of the original CMS site in 2007. In Feb of 2010, the site received more than 50,000 visits, 42% of which is direct traffic (not linked from another site or going through a search engine) with an average of 3.1 pages viewed per visit and nearly 3 minutes on site. This is comparable to the February of the previous year.

Aside from the main page, in February 2010, the largest percentage of page visits were to Academic Programs, Admissions, and Library. Top pages vary slightly month-to-month. On other months, class schedules or other pages may exceed Library visits. What has remained quite steady is that approximately 70% of visitors are returning visitors. Coupled with information about page views, it appears that the bulk of users are those affiliated directly with the University.

As the amount of content on the site has grown, so has the need to manage structure. Though the three main menus on the site provide flexible contextual organization in terms of user roles, functional categories, and superlevel navigation (e.g., high frequency pages, external MyUB, sitemap), it may be time to step back to reconsider how content is organized and presented. Also, worth considering is the growing use of mobile devices. In Feb 2010, there were 679 mobile visits posted. Google has only recently started tracking this. This report does not address the needs of mobile users, but this is certainly worth further consideration.

2.3.Method

We used the existing University of Baltimore Law School sitemap for organizing content into an Excel-based content inventory. Twelve major content sections down three levels deep include:

Prospective Students/Admissions	
Current Students	
Admitted Students	
Faculty and Staff	
Alumni	

About Law School	
Academic Programs	
Clinical Law Programs	
Centers and Programs	
Career Development	
Library and Technology	
News and Events	

Columns were labelled as such:

ID	Page Title	Page Type	Location	Content Chunks	Sub-categories	Orphaned Pages	Non HTML	Comments
		1						

Each page was labelled by: a unique ID, the page title derived from the website page title, page type categorized by the IA team, location by URL, content chunks as a summary representation of content, sub-categories for pages with menu structure, orphaned pages for pages that do not have links or links leading to them, non-html pages for PDF or other non-html content, and comments.

After coming to consensus on a top-level IA, we each went off on our own to each work on levels two and three. We negotiated consensus on these levels and consolidated input into a single IA using a semantic concept mapping tool called Visual Understanding Environment (<u>VUE</u>) from Tufts University (Figure 1). Our concept map of the top three levels of hierarchical content initially included 271 individual elements. In the course of categorization, any duplicate (or near duplicate) content was deleted and new categories formed.

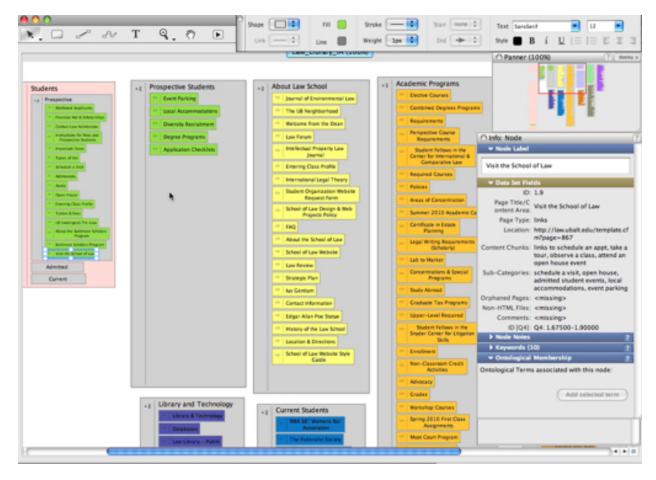


Figure 1: VUE concept map as a tentative IA

We then used an online card sort tool (described in section 2.5) in order to take into account key stakeholder mental models. The card sort caused us to refine our IA (presented in Appendices 1 and 2).

2.4. Analysis

From the original twelve categories derived from the University Law School website sitemap, we consolidated content into nine top-level categories. "Admitted students" and "current Students" were collapsed into a single category "students". "Centers and Programs" and "Career Development" were collapsed under "Student Resources". "Clinical Law Programs" were collapsed under "Academic Programs". Nine top-level categories is a rather large grouping for a single navigation bar, but within acceptable limits (see Figure 4). We planned to use not only conceptual categories, but information from Google statistics to help us determine how menu navigation should be structured on the page.

Our IA team also annotated page category types include: menu / main, links / links with descriptions, orientation, overview / description / info / summary, graduation, student organizations, specs, agenda / calendar, checklist, event, feed (rss), form, directory, profile, photos, contacts, news, mission, table, list, map / directions, faq, awards, brochure, tips, guide, press releases. Though we were not always consistent in labelling, it became clear that page types also affect search and findability of content. For example, someone searching on "calendar" may find a variety of calendars on the site. Page types can be very helpful for providing user recommendations such as "related content" as well as faceted search.

User testing via the online card sort tool http://websort.net (Figure 2) helped us refine our initial content model by giving us feedback from users about how information should be organized. We created a top-level hierarchy and asked users to sort second tier content into top-level bins. Users were allowed to re-name or create new categories.

After revising our content model, we looked at Google statistics, the current UB Law School website, other exemplar Law School websites, and Google custom search documentation to consider user orientation, page structure, user navigation, and site search. We generated illustrative wireframes presented in section 4 below.

Further results and analysis relating to the user study will be discussed in section 3.4 below.

2.5. Tools

For the initial content inventory we used Google Spreadsheets so that we could easily share and update the content inventory among team members. For re-organization and categorization, we used the Tufts University Visual Understanding Environment (VUE). From imported data in VUE, keywords can be automatically assigned from categories and used to support map-based search and analysis. VUE supports the Dublin Core metadata scheme and rich ontology mapping. We did not make use of metadata and ontology-related features, but found that csv import and drag-and-drop, and hierarchical stacking greatly facilitated content re-organization. One weakness of VUE was the inability to export back out to outline view.

We used http://websort.net for our participant study.

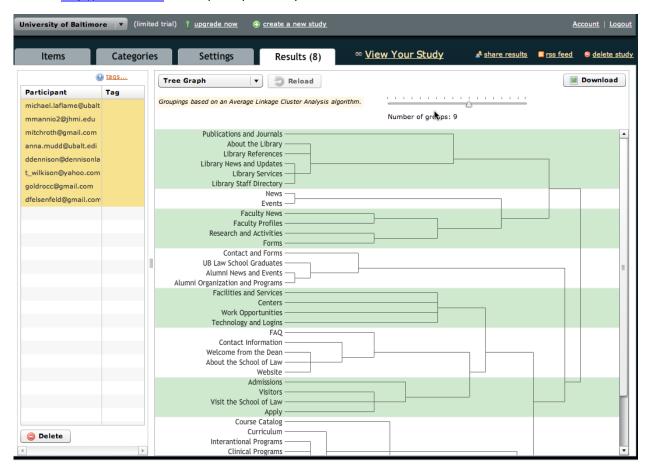


Figure 2: http://websort.net Results

Websort.net provides for a variety of analytic views. Figure 2 illustrates groupings when the threshold for cluster analysis was set to nine groups. Card sort results will be discussed further in 3.3 below.

3. Card Sort

3.1. Methodology

We recruited eight volunteers to participate in an online, mixed card sort at http://websort.net. Via websort.net, we presented participants with a pre-existing set of labeled categories, but also allowed them the ability to rename groups, delete them, and create new ones. We presented participants with top-level bins and a set of second-level categories/items to sort into these bins. Each participant worked on his or her own time following online instructions. The card sort took each no longer than 10 minutes and there were no reported problems or difficulties.

3.2. Participants

Ideally, our participants would have been a mix of University of Baltimore Law School faculty and staff, students (current, prospective), and alumni. We recruited seven law graduates and one prospective UB student. Three of seven graduates were recent UB graduates. Of the other four non-UB graduates, one participant was an assistant district attorney and one was in semi-retirement. The last two were recent non-UB.

3.3. Results

From card sort results (Figure 3; alternative view in Appendix D), we can see that some information categories share strong agreement and some do not (dark blue indicates strong agreement item by item).

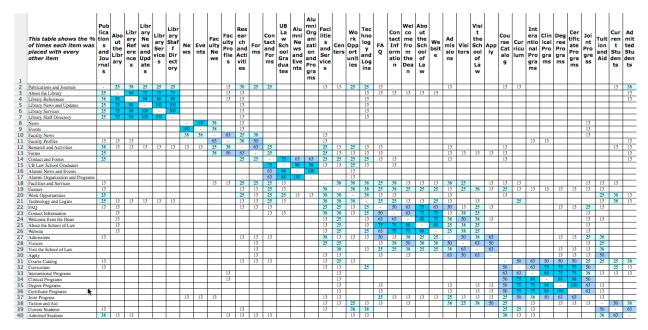


Figure 3: Card Sort Results Item by Item

Second level categories that show strong correlation between participants include:

- News and Events
- Alumni

- Library
- About
- Academic Program

Second level categories with weaker correlation between participants include:

- Student Resources
- Students
- Prospective Students
- Faculty and Staff

Card sort results may be viewed at http://websort.net/r/F396C3/2c9e0c58d34a/.

3.4. Analysis

In general, participants had problem classifying items such as "technology and logins", "tuition and aid", and "publications and journals" which could easily fall under multiple categories. Of some concern was the lack of context available from websort.net such that users not familiar with the UB site had to make a guess at what was meant by category labels. Only one participant questioned any of the provided category labels by suggesting that some of the labels seemed redundant or overlapping and might be merged. We decided to retain all nine categories and deal with remaining content categorization issues by adopting a strategy that makes it easier for participants to find content and also remember where it is located.

4. Findings and Recommendations

4.1. Revised Content Model

Changes to the Law School website content model are seen at a glance in Appendix C. There are many so this section will not address them exhaustively. Of note is that there are fewer top-level categories and more subcategories. "Students" contains "current students" with "admitted students" as sub-categories. "Academic programs" contains all programs and curriculum. A new category was devised for "student resources" that contains "centers", "work opportunities", and "technology and logins". Relabeled was "research and activities" to "faculty research and activities" because of the challenge we saw with users in the card sort.

Another way to view categorical changes is by examining the VUE document (highlighted in Appendix A). New categories are indicated by color so that it's easy to visually scan changes from the original IA.

4.2. Organization Navigation

Summarized in the table below are four observations and recommendations that are concerned with content organization and navigation.

2.1.1.1 Observations	2.1.1.2 Recommendations
1. Navigation – The breadcrumb navigation is very helpful for user orientation. However, path is not reflected uniformly via cues across the three menu bars on the page. That is, in some cases a menu item triggers expansion of the right page menu and in other cases not. And with so many menus it is difficult to remember where to find previously found information.	Merge categories where possible. Limit menus to two, promoting pages that users search with high frequency to the top right menu. Integrate role-based categories with functional categories in the main menu. Use dropdown menus to increase the amount of usable space on the page. (Figures 4-5)
2. Navigation – Research shows that users prefer navigation that is left justified, left aligned menus, as opposed to right aligned (Kalbach and Bosenick, 2003; Nielsen 2008).	Move sidebar navigation elements to the left side of the page. (Figures 5-6)
3. Navigation – The third level navigation is difficult to navigate because of the large number of items.	Place second level navigation in a drop down menu underneath first level navigation. Place third level navigation items in a left navigation panel. Additionally, omit redundant and unnecessary items. (Figure 6)
4. Organization – Too many pages act as menus and users must click through several to get to content. For example, the academic enrollment page requires you to click a link to a registration page containing the same sub-menu that was on the enrollment page but no additional content.	Reduce the number of pages functioning strictly as menu pages by adding a rollover effect to the top navigation bar to make sub-categories findable without clicking through to a secondary menu page. Clicking on a second level menu category in the left navigation panel exposes third level categories.
5. URL – Page URLs with the form as template.cfm?page=762 do not support the user's ability to know where they are in the site.	If possible, enable URL re-writing so that URLs indicate content location in site structure.

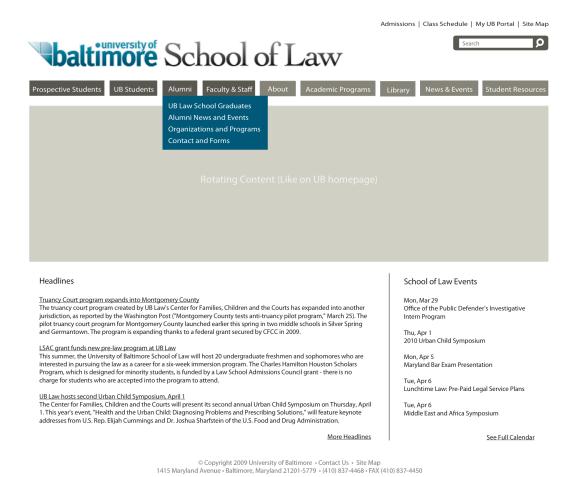


Figure 4: First and Second Level Menu Navigation via Cursor Rollover

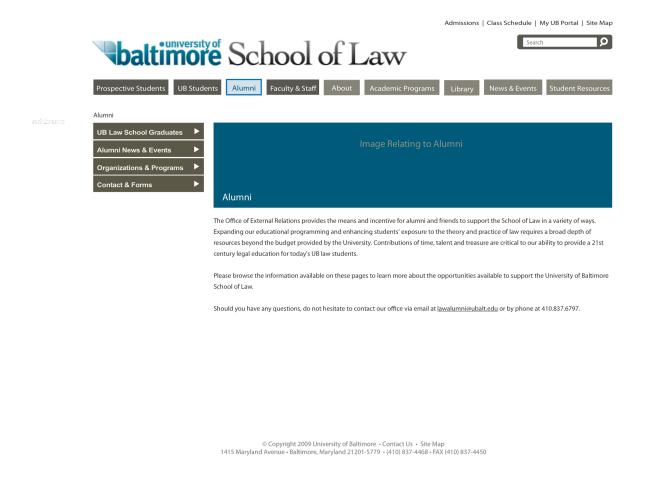


Figure 5: Clicking Exposes the Second Level Menu on the Left

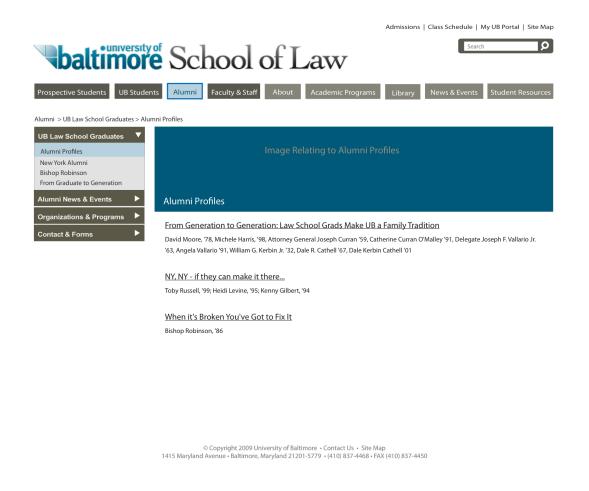


Figure 6: Clicking Expands the Third Level Menu

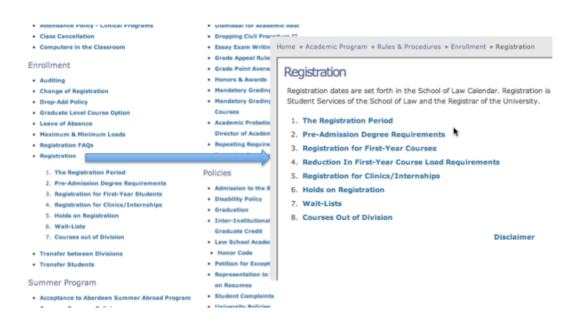


Figure 7: Menu Page Redundantly Leading to another Menu Page

Note in figures 4-6 above, that role-based categories are distinguished in the top-level navigation from more functional categories by deeper color saturation. Also, we've promoted high frequency pages "admissions" and "class schedule" to the small navigation bar at the top right.

4.3. Search and Categorization

The use of content labels may be used to aid users both in search as well as finding related content on the site.

2.1.1.3 Observations	2.1.1.4 Recommendations
6. Labels and content categorization – Page types and categories can be used to help recommend related content to users.	Categorize and label pages by type (e.g., form, event, news), media, and topic. Annotated content can be used to enrich pages. For example, if someone is looking for a student form but searches on and finds faculty forms, it would be useful to provide links from faculty forms to other types of forms (Figure 8). Similarly, someone interested in registering for classes may be also interested in related content such as course schedules.
7. Search – Custom Google search results are difficult to read and interpret. Page title information is useful, though, no matter where pages exist in content hierarchy, titles are generally prefixed with "University of Baltimore Law School >> page title".	Labeled content categories (as above) can be used to annotate pages and provide additional context. Standardize layout and template of search results to the rest of the site. (Figure 8)

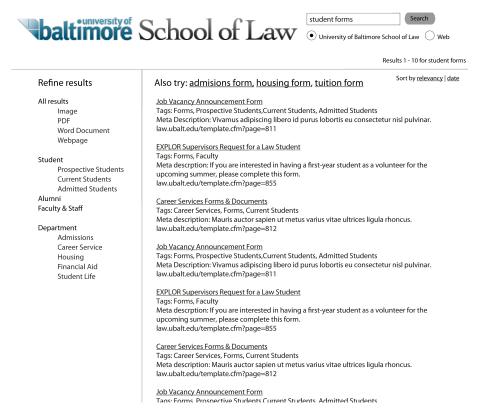


Figure 8: Search Results Wireframe

Figure 8 is a revised search results page that illustrates recommendations 6 and 7 above.

4.4. Other Recommendations

Below are additional, minor recommendations.

8. Image Size – Most top-level menu pages contain a	Rather then using a large 570x380 image on all top-level						
large, rotating image taking up a significant portion of	pages, we recommend using an image that conforms to						
the screen. These images do not appear to be related to	a more industry standard banner size. Additionally, we						
the associated content topic.	suggest that all images on a page relate to the content						
	on that page.						
9. Location and Directions – Though directions for the	Include on the "maps and directions page" a link to a						
university law school are easy to find, it is not so easy to	map orienting users to campus buildings and facilities.						
find a campus map that shows the relative location of							
facilities.							
10. Search – The standard template is not used for	Ensure that all menu items and a link to the main Uni-						
Google custom search results.	versity of Baltimore Law School are accessible from the						
	custom search results page.						

5.Conclusion

The purpose of this study is to:

- Propose an information architecture that better supports user orientation, navigation, and route-finding;
- Make concrete recommendations to that aim.

Our primary recommendations fall under two broad categories: 1) improving organization and navigation and 2) adding content labels that support both "related content" as well as search. Specific recommendations fall into the categories of improving navigation, organization, labeling / content categorization, and search.

6. References

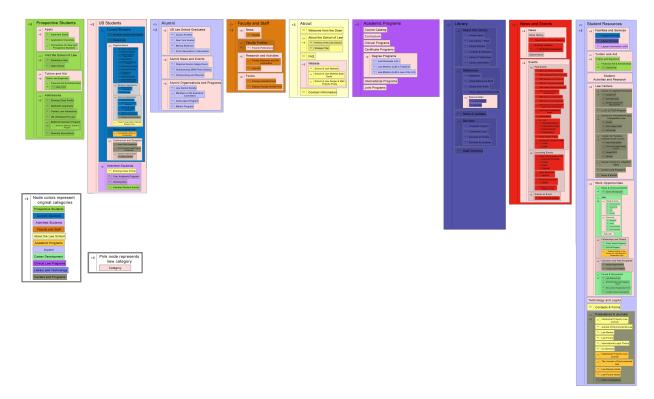
Kalbach, J. and Bosenick. T. (2003). Web Page Layout: A Comparison between Left and Right-Justified Navigation Menus. *Journal of Digital Information*, 4(1).

Nielsen, J. (2008). *Alertbox: Right-Justified Navigation Menus Impede Scannability*. Retrieved from: http://www.useit.com/alertbox/navigation-menu-alignment.html

Appendix A: Visual Information Architecture

This rich content model may be explored by either viewing a PDF version online or the original VUE file downloadable from:http://student-iat.ubalt.edu/students/harper_I/#%5B%5BFinal%20Report%5D%5D

VUE is available for all platforms and may be downloaded from: http://vue.tufts.edu



Appendix B: Outline Information Architecture

- I. Prospective Students
 - a. Apply
 - i. Important Dates
 - ii. Application Checklist
 - iii. Instructions for New & Prospective Students
 - b. Visit the School of Law
 - i. Schedule A Visit
 - ii. Open House
 - c. Tuition & Aid
 - i. Tuition & Expenses
 - ii. Financial Aid & Scholarships
 - d. Admissions
 - i. Entering Class Profile
 - ii. Wait Listed Applicants
 - iii. Contact Law Admissions
 - iv. UB Undergrad Pre-Law
 - v. Baltimore Scholars Program
 - vi. Diversity Recruitment
- II. UB Students
 - a. Current Students
 - i. Commencement Information
 - ii. Student Life
 - iii. Organizations
 - iv. Writing Competitions
 - v. Conferences & Symposia
 - b. Admitted Students
 - i. Entering Class Profile
 - ii. Your Academic Program
 - iii. Housing Day
 - iv. Admitted Student Events
- III. Alumni
 - a. UB Law School Graduates
 - i. Alumni Profiles
 - ii. New York Alumni
 - iii. Bishop Robinson
 - iv. From Generation to Generation
 - b. Alumni News & Events
 - i. Regional Alumni Happy Hours

- ii. Homecoming 2006 Photo Gallery
- iii. Homecoming & Reunion
- c. Alumni Organizations & Programs
 - i. Law Alumni Society
 - ii. Members of the Executive Committee
 - iii. Class Agent Program
 - iv. Mentor Program
- IV. Faculty & Staff
 - a. Faculty News
 - i. Faculty
 - b. Faculty Profiles
 - i. Faculty Publications
 - c. Research & Activities
 - i. Faculty Research & Dev Committee
 - ii. Agenda
 - d. Forms
 - i. Faculty Activities Form
 - ii. Adjunct Faculty Profile Form
- V. About
 - a. Welcome from the Dean
 - b. About the School of Law
 - i. History of the Law School
 - ii. Strategic Plan
 - c. FAQ
 - d. Website
 - i. School of Law Website
 - ii. School of Law Website Style Guide
 - iii. School of Law Design & Web Projects Policy
 - e. Contact Information
- VI. Academic Programs
 - a. Course Catalog
 - b. Curriculum
 - c. Clinical Programs
 - d. Certificate Programs
 - e. Degree Programs
 - i. Juris Doctorate(J.D.)
 - ii. Law Masters (LLM in Taxation)
 - iii. Law Masters (LLM in Law of the U.S.)
 - f. International Programs

g. Joint Programs

VII. Library

- a. About the Library
 - i. Library Hours
 - ii. Law Library Public
 - iii. Library Policies
 - iv. Location & Directions
 - v. Library & Technology
 - vi. Library Information
- b. References
 - i. Databases
 - ii. Virtual Reference Shelf
 - iii. Library User Guide
 - iv. Library Maps & Finding Aids
 - v. External Sites
- c. News & Updates
- d. Services
 - i. Computer Support
 - ii. Interlibrary Loan
 - iii. Services for Faculty
 - iv. Services for Students
- e. Staff Directory

VIII. News & Events

- a. News
 - i. News History
 - ii. Submit News
- b. Events
 - i. Past Events
 - ii. Upcoming Events
 - iii. Submit an Event
- IX. Student Resources
 - a. Facilities & Services
 - i. Campus Services
 - ii. Library Services
 - iii. Laptop Information (wifi)
 - b. Tuition & Aid
 - i. Tuition & Expenses
 - ii. Financial Aid & Scholarships
 - c. Student Activities & Research

d. Law Centers

- i. Center on Applied Feminism
- ii. LL.M. (LOTUS) Program
- iii. Center for International & Comparative Law
- iv. Center for Families, Children & the Court
- v. Snyder Center for Litigation Skills
- vi. Centers & Programs
- vii. News & Events
- e. Work Opportunities
 - i. News & Announcements
 - ii. Jobs
 - iii. Fellowships and Grants
 - iv. Volunteer & Paid Programs
- f. Technology & Logins
- g. Contacts & Forms
- h. Publications & Journal
 - i. Intellectual Property Law Journal
 - ii. Journal of Environmental Law
 - iii. Law Review
 - iv. Law Forum
 - v. International Legal Theory
 - vi. Ius Gentium
 - vii. Intellectual Property Law Journal
 - viii. The Journal of Environmental Law
 - ix. Law Review Home
 - x. Law Forum Home
 - xi. CFCC Publications

Appendix C: Site Map

This sitemap may be explored by visiting: http://studentiat.ubalt.edu/students/mudd_n/idia_IA/

UNIVERSITY OF BALTIMORE - LAW SCHOOL Information Architecture Version 1.0 My UBalt Portal Site Map Admissions Class Schedule HTTP://LAW.U Home /PROSPECTIV /FACULTYAND STAFF /NEWSANDEV About Alumni Students Library Academic Programs Prospective Students Faculty and Staff News and Events Student Resources UB Law School Graduates Current Students Welcome From The Dean About The Library News News Facilities & Services Course Catalog Admmitted References Alumni News & Events Students **Profiles** About The Tuition & Aid Law School Curriculum Tuition & Aid News And Updates Faculty Research & Activities Organizations FAQ Admissions Programs Clinical **Programs** Student Activities & Research Services Website Visit The Law School Forms Certificate Programs Staff Directory Contact Information Law Centers Work Opportunties International Technology & Logins Joint Programs Contacts & Forms Publication & Journals

Appendix D: Card Sort Results

Card sort results available from: websort.net/r/F396C3/2c9e0c58d34a/

1	This table shows the % of times each item was placed in each group	?	Abo ut	Aca de mic Pro gra ms	Alu mni		Cou rse s and Aca de mic Pro gra ms	Fac ulty and Staf f	Libr ary	Ne ws and Eve nts	Pro spe ctiv e	Stu den t Org ani zati ons and Jou rnal s	Stu den t Res our ces	Stu den ts	Visi t	We bsit e
2	Publications and Journals								25			13	50	13		
3	About the Library		13						75				13			
4	Library References								88				13			
	Library News and Updates								100							\vdash
	Library Services								100							\vdash
7	Library Staff Directory								100	100						\vdash
8	News									100						\vdash
9	Events							63		38						-
10	Faculty News			13	-	-	-	75		38		_	13			\vdash
11	Faculty Profiles			1.5	_	_		38	13	13		_	25	13		\vdash
12	Research and Activities				-	-	_	63	13	13	13	_	25	13		\vdash
	Forms			_	63			0.5			1.5	_	38			-
14	Contact and Forms UB Law School Graduates				88		-					-	13			\vdash
	Alumni News and Events				100		_					_	15			\vdash
17	Alumni News and Events Alumni Organization and Programs			_	100		_					_				-
	Facilities and Services		13	_	100	13	_	13			13		38	13		\vdash
	Centers		25	13	_	13	_	13			13		38	15	13	-
20	Work Opportunities		2.0	1.5	13	_	 				10		63	25		
21	Technology and Logins		13		1.5				13				38	25		13
	FAQ		75		_	_	_		1.5		13	 	13	2.5		-13
	Contact Information		75		_	13	_				1.0		13			
24	Welcome from the Dean		88				_				13					-
	About the School of Law		100			_										
	Website		88													13
27	Admissions		25								63		13			
	Visitors		38								50				13	
29	Visit the School of Law		25								63				13	
30	Apply										100					
	Course Catalog			38			13						25	25		
32	Curriculum			63			13							25		
33	Interantional Programs			75			13							13		
34	Clinical Programs			88			13									
35	Degree Programs			75			13				13					
36	Certificate Programs			75			13				13					
	Joint Progress	13	13	38			13			13	13					
	Tuition and Aid										50		13	38		
39	Current Students												13	88		\sqcup
40	Admitted Students												25	75		