



Search Engine Optimization for Libraries

"We cannot call a digital-library or electronic publishing system a success if we cannot measure and interpret its use."

- Peterson Bishop 1998

Research Team



- ❖ **Scott Young**
Digital Initiatives Librarian at Montana State University
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Head of Library Informatics & Computing at Montana State University Library
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Semantic Web Research Director at Montana State University Library
- ❖ **Kenning Arlitsch**
Dean of the Library at Montana State University. His book, co-authored with Patrick O'Brien, is titled Improving the Visibility and Use of Digital Repositories through SEO, and was published in February 2013.



INSTITUTE *of*
Museum and **Library**
SERVICES

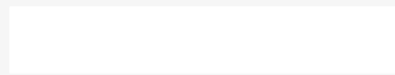
"Getting Found: Search Engine Optimization
for Digital Repositories"

- IMLS 3 Year Research Grant

pinboard.in/u:jasonclark/t:lita-seo/

Agenda - Day 3

- ❖ What is Structured Data?
- ❖ New Markup Practices
- ❖ Creating/Refining the Searchable Index
- ❖ Impact of these Semantic SEO techniques
- ❖ Questions
- ❖ Resources



8:43 AM on July 30, 2013

A MILLION people with SEO in their job title? That fact blows me away. Great post. I'm still amazed that people are trying to game the algorithm and out-smart Google.

White Hat SEO

- SE approved "Webmaster Guidelines"
- Focus on improving user experience
 - Unique & accurate content
 - User relevant vocabulary & keywords
 - Intuitive site architecture
- Build Stability & Trust

Homework

Traditional SEO

https://docs.google.com/document/d/1L8lbQTFBdFkgHCv0bz7pqV5tpMxdFT_Ljaz9fcC-O1o/edit?usp=sharing

SEO Course Moodle instance

<http://www.classes.ala.org/course/view.php?id=537>

Writing an Item Page Title

<title>

"Specific Keyword Phrase - Context"

Example:

"James Willard Schultz in Buffalo Coat going home to Boonville, New York"

<description>

a short, declarative sentence that incorporates a page's <title> keyword phrase and context

Example:

"Photo of James Willard Schultz in Buffalo Coat returning home to Boonville, New York from Montana State University (MSU) Library Special Collections"

Introducing Semantic Markup

- ❖ HTML5 semantic tags and schema.org vocabularies that help classify page types and identify content on the page

“If Google understands the content on your pages, we can create rich snippets—detailed information intended to help users with specific queries.”

https://support.google.com/webmasters/answer/99170?hl=en&ref_topic=1088472

Semantic & Functional Markup

header
footer
main
nav
section
aside

figure
figcaption
article
menu
....
contenteditable
attribute

www.whatwg.org/specs/web-apps/current-work/

Link Relations

Explain why you're pointing to another page.
"I'm pointing to this other page because..."

```
<link rel="stylesheet" href="template.css"/>
```

<ul style="list-style-type: none">rel=alternaterel=archivesrel=authorrel=externalrel=iconrel=license	<ul style="list-style-type: none">rel=canonicalrel=prefetchrel=searchrel=sidebarrel=tag...
---	---

Item: **Women posing on college locomotive engine**

+ zoom



Title: Women posing on college locomotive engine

Creator: unknown

Date: unknown

Description: Women posing on a college locomotive engine.

Notes:

Physical Description: Photo print - Black and White

Subjects: [Locomotive](#)

Keywords: locomotive

Photograph ID: parc-000432

[Higher quality/resolution](#)

[Persistent link](#)

[Download](#)

[Embed](#)

[<a title="Women posing on college I](#)

[Share](#)



[Back to MSU Photos Homepage](#)

Before Schema.org markup

Item: **Women posing on college locomotive engine**

+ zoom



Title: Women posing on college locomotive engine

Creator: unknown

Date: unknown

Description: Women posing on a college locomotive engine.

Notes:

Physical Description: Photo print - Black and White

Subjects: [Locomotive](#)

Keywords: locomotive

Photograph ID: parc-000432

[Higher quality/resolution](#)

[Persistent link](#)

[Download](#)

[Embed](#)

[<a title="Women posing on college I](#)

[Share](#)



[Back to MSU Photos Homepage](#)

After Schema.org markup

```

<div id="main">
<meta content="http://arc.lib.montana.edu/msu-photos/objects/thumb-parc-000432.jpg" />
...
<h2 class="mainHeading">Item: <strong>Women posing on college locomotive engine</strong></h2>
<ul class="item">
<li>
<ul class="metadata">
<li class="object">
<a title="zoom & scan view - Women posing on college locomotive engine" href="/msu-photos/viewer.php?id=432" alt="Women posing on college locomotive engine">
<span>&#43; zoom</span>
</a>
</li>
<li class="describe">
<p><strong>Title:</strong> Women posing on college locomotive engine</p>
<p><strong>Creator:</strong> unknown</p>
<p><strong>Date:</strong> 1931-05-15</p>
<p><strong>Description:</strong> Women posing on a college locomotive engine.</p>
...
<p><strong>Physical Description:</strong> Photo print - Black and White</p>
...
<p><strong>Keywords:</strong> locomotive</p>
<p><strong>Photograph ID:</strong> parc-000432</p>
</li>
</ul><!-- end metadata <ul> -->
</li>
</ul><!-- end item <ul> -->
</div>

```

```

<div id="main" vocab="http://schema.org/" typeof="ItemPage" >
<meta property="thumbnailUrl" content="http://arc.lib.montana.edu/msu-photos/objects/thumb-parc-000432.jpg" />
...
<h2 class="mainHeading">Item: <strong><span property="name">Women posing on college locomotive
engine</span></strong></h2>
<ul class="item">
<li>
<ul class="metadata">
<li class="object">
<a title="zoom &amp; scan view - Women posing on college locomotive engine" href="/msu-photos/viewer.php?id=432"
alt="Women posing on college locomotive engine">
<span>&#43; zoom</span>
</a>
</li>
<li class="describe" vocab="http://schema.org/" typeof="Photograph">
<p><strong>Title:</strong> <span property="name">Women posing on college locomotive engine</span></p>
<p><strong>Creator:</strong> <span property="author">unknown</span></p>
<p><strong>Date:</strong> <span property="dateCreated">1931-05-15</span></p>
<p><strong>Description:</strong> <span property="description">Women posing on a college locomotive engine.
</span></p>
...
<p><strong>Physical Description:</strong> <span property="genre">Photo print - Black and White</span></p>
...
<p><strong>Keywords:</strong> <span property="keywords">locomotive</span></p>
<p><strong>Photograph ID:</strong> parc-000432</p>
</li>
</ul><!-- end metadata <ul> -->
</li>
</ul><!-- end item <ul> -->
</div>

```

```
<dl>
<dt>Title</dt>
<dd>A River Runs Through It and Other
Stories</dd>
<dt>Author</dt>
<dd>Norman Maclean</dd>
<dt>Publication date</dt>
<dd>October 1, 2001</dd>
<dt>ID</dt>
<dd>0226500667</dd>
</dl>
```

```
<dl itemscope itemtype="http://schema.org/Book">
<dt>Title</dt>
<dd itemprop="title">A River Runs Through It and
Other Stories</dd>
<dt>Author</dt>
<dd itemprop="author">Norman Maclean</dd>
<dt>Publication date</dt>
<dd itemprop="pubdate">October 1, 2001</dd>
<dt>ID</dt>
<dd itemprop="isbn">0226500667</dd>
</dl>
```

Schema.org

A lingua franca for web classification and markup

Google, Bing, Yahoo, Yandex

Why Schema.org?

- Libraries as publishers in Web of Data
- Machines understanding our data = Significance
- Can improve findability in search engines (search engine optimization)
- Can create efficiencies in our own indexing (e. g., digital collections search)

5 Star Linked Open Data



make your stuff available on the Web (whatever format) under an open license¹



make it available as structured data (e.g., Excel instead of image scan of a table)²



use non-proprietary formats (e.g., CSV instead of Excel)³



use URIs to denote things, so that people can point at your stuff⁴



link your data to other data to provide context⁵

Creative Work - Schema.org

Thing > CreativeWork > ?

“The most generic kind of creative work, including books, movies, photographs, software programs, etc.”

<http://schema.org/CreativeWork>

has property

<http://schema.org/Creator>

Web Page - Schema.org

Thing > CreativeWork > WebPage

“A web page. Every web page is implicitly assumed to be declared to be of type WebPage...”

<http://schema.org/WebPage>

has property

<http://schema.org/isPartOf>

Web Page - Schema.org

Thing > CreativeWork > WebPage > ?

AboutPage

CheckoutPage

CollectionPage

ContactPage

ItemPage

MedicalWebPage

ProfilePage

QAPage

SearchResultsPage

sameAs - Schema.org

“URL of a reference Web page that unambiguously indicates the item's identity.”

<http://schema.org/Thing>
has property
<http://schema.org/sameAs>

Coconut Cream Pie

Cooking Time: PT6H

Cooking Method: mix, refrigerate

Category: dessert

Cuisine Type: American

Servings: 8-12 servings

Related: [dbPedia entity](#)

Ingredients:

- 6 oz cream of coconut, such as Coco Lopez 10 oz mini marshmallows 1/4 cup milk 3 cups heavy cream 2 cups shredded coconut 2 tsp coconut extract

Directions:

1. Mix cream of coconut with milk, add the marshmallows and melt

marshmallows are melted.

2. Set mixture aside and let cool.
3. Once mixture is cooled/jelled put into kitchen aid mixer and whip until frothy like a latte.
4. Put mixture into another bowl.
5. Whip heavy cream till peaks form then fold into marshmallow mixture
6. Add 1 cup of coconut by hand make sure it doesn't clump up
7. Toast the other cup of coconut and set aside for garnish
8. Pour into cooked pie shells
9. Sprinkle toasted coconut on top
10. Refrigerate for at least 6 hours



```

95 <body vocab="http://schema.org/" typeof="WebPage">
96 <meta name="thumbnailUrl" content="http://upload.wikimedia.org/wikipedia/commons/thumb/8/84/Coconut_cream_pie.jpg/300px-Coconut_cream_pie.jpg" />
97 <article vocab="http://schema.org/" typeof="Book">
98 <meta property="name" content="Coconut Cream Pie" />
99 <meta property="creator" content="Amanda Hartsell" />
100 <section vocab="http://schema.org/" typeof="Recipe">
101 <figure>
102     <h2 data-sizes="title fallback">
103         <span class="chapter"><a href="./table-of-contents.html">Table of Contents</a> > Recipe and Essay</span>
104         <span property="name">Coconut Cream Pie</span>
105     </h2>
106 </figure>
107 <p>Cooking Time: <span property="cookTime">PT6H</span></p>
108 <p>Cooking Method: <span property="cookingMethod">mix, refrigerate</span></p>
109 <p>Category: <span property="recipeCategory">dessert</span></p>
110 <p>Cuisine Type: <span property="recipeCuisine">American</span></p>
111 <p>Servings: <span property="recipeYield">8-12 servings</span></p>
112 <p>Related: <a property="sameAs" href="http://dbpedia.org/page/Cream_pie">dbPedia entity</a></p>
113 <p>Ingredients:</p>
114 <section property="ingredients">
115 <ul>
116     <li>6 oz cream of coconut, such as Coco Lopez
117 10 oz mini marshmallows
118 1/4 cup milk
119 3 cups heavy cream
120 2 cups shredded coconut
121 2 tsp coconut extract</li>
122 </ul>
123 </section>
124 <p>Directions:</p>
125 <section property="recipeInstructions">
126 <ol>

```

Role - Schema.org

“Represents additional information about a relationship or property. For example, a Role can be used to say that a Person's 'actor' role in a Movie was for some particular characterName.”

<http://schema.org/Thing>
has property
<https://schema.org/Role>



People in the library - individual results

**Jason Clark**

Title: Head of Library Informatics and Computing
[Associate Professor]

Department: Library Informatics and Computing,
Montana State University

Phone: 406-994-6801

Email: jaclark@montana.edu

Room: 139

 [Vita](#)

 [Homepage](#)

 **Get QR Embed Code**

`
72 <meta property="name" content="Montana State University (MSU) Library" />
73 <meta property="sameAs" content="http://www.freebase.com/m/0j3y9r1" />
74 <div property="member" typeof="OrganizationRole">
75 <ul property="member" typeof="Person" class="aboutList">
76 <li class="photo">
77 <li class="infoContact">
78 <h3 property="name" >Jason Clark</h3>
79 <p>Title: Head of Library Informatics and Computing
[Associate Professor]</p>
80 <p>Department: Library Informatics and
Computing, Montana State University</p>
81 <p>Phone: 406-994-6801</p>
82 <p>Email: jaclark@montana.edu</p>
83

```

# Action - Schema.org

“An action performed by a direct agent and indirect participants upon a direct object.”

<http://schema.org/Thing>  
has property

<https://schema.org/Action>  
or

<https://schema.org/potentialAction>

```
<script type="application/ld+json">
{
 "@context": "http://schema.org",
 "@type": "Organization",
 "name": "Montana State University (MSU) Library",
 "sameAs": "http://www.freebase.com/m/0j3y9r1",
 "potentialAction": {
 "@type": "ViewAction",
 "target": [
 "http://www.lib.montana.edu",
 {
 "@type": "EntryPoint",
 "urlTemplate": "http://www.lib.montana.edu",
 "contentType": "text/html"
 }
]
 }
}
</script>
```

Web

Images

Videos

News

Shopping

More ▾

Search tools



SafeSearch on

About 45,800,000 results (0.46 seconds)

### Jason Clark - IMDb

[www.imdb.com/name/nm0164063/](http://www.imdb.com/name/nm0164063/) ▾ Internet Movie Database ▾

**Jason Clark**, Producer: Ted. **Jason Clark** is a producer in the world of live-action and CGI feature films and television programs. He recently served as executive ...

### Jason Clarke - IMDb

[www.imdb.com/name/nm0164809/](http://www.imdb.com/name/nm0164809/) ▾ Internet Movie Database ▾

**Jason Clarke**, Actor: Zero Dark Thirty. **Jason Clarke** was born on July 17, 1969 in Winton, Queensland, Australia. He is an actor and producer, known for Zero ...

[Photo Gallery](#) - [Publicity](#) - [\(I\)](#) - [Contact information](#) - [Credited with](#)

### Jason Clark

[jasonclarkis.com/](http://jasonclarkis.com/) ▾

**Jason Clark** is an author, speaker, singer/songwriter and a pastor at Crossroads Church in Concord NC. He has served as a worship leader and has recorded ...

### Jason Clark - Montana State University MSU Library

[www.lib.montana.edu/.../about.php?id=...](http://www.lib.montana.edu/.../about.php?id=...) ▾ Montana State University Library ▾

Head of Library Informatics and Computing [Associate Professor] - Montana State University

People in the library - individual results. photo of **Jason Clark**. **Jason Clark**. Title: Head of Library Informatics and Computing [Associate Professor]. Department: ...



From Google Contacts

Only you can see these results

## Jason Clark

digital librarian, web developer, metadata geek, hacker, husband, dad - doing it all under the Big Sky.



[Update your profile](#)

digital initiatives librarian at Montana State University  
Attended University of Wisconsin  
Lives in Bozeman, MT

**Home:** [jasclark@gmail.com](mailto:jasclark@gmail.com)

**Work:** [jaclark@montana.edu](mailto:jaclark@montana.edu)

**Home:** 1-406-579-6360

\*Tentative results for SEO - This is a personal result set.



Site Dashboard

Site Messages

## ▼ Search Appearance ⓘ

## Structured Data

Data Highlighter

HTML Improvements

Sitelinks

## ▸ Search Traffic

## ▸ Google Index

## ▸ Crawl

Security Issues

Other Resources

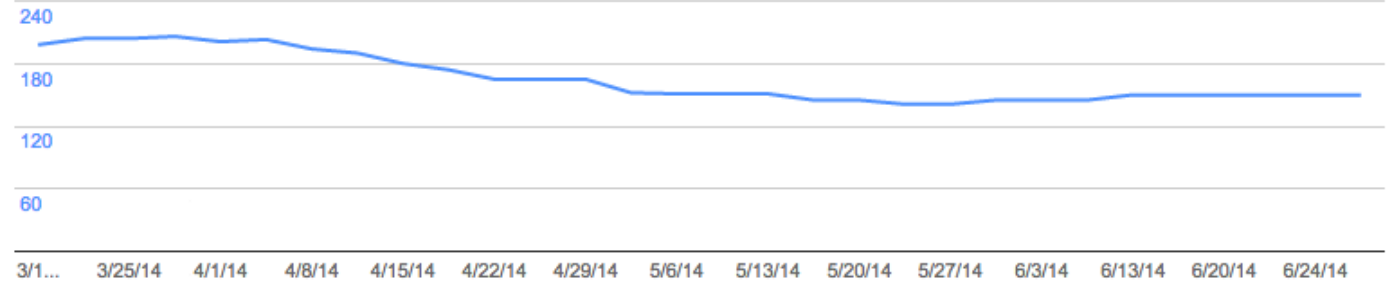
## ▸ Labs

## Structured Data

Status: 6/27/14

**150** Items ⓘ  
on 31 pages**0** Items with Errors ⓘ  
on 0 pages

Items



Download

Show

25 rows ▾

1-4 of 4



| Data Type | Source             | Pages | Items | Items with Errors ▾ |
|-----------|--------------------|-------|-------|---------------------|
| Book      | Markup: schema.org | 30    | 58    | —                   |
| WebPage   | Markup: schema.org | 31    | 31    | —                   |
| Recipe    | Markup: schema.org | 31    | 31    | —                   |
| Article   | Markup: schema.org | 30    | 30    | —                   |

[www.google.com/webmasters/tools/](http://www.google.com/webmasters/tools/)

 Search

 Explore

 About

Search MSU Library Digital Collections

coconut+cream



Search for **coconut cream** (Returning 2 matches from a 100 item set)

Filter

[All](#)

[Images](#)

[Documents](#)

[Videos](#)

[Sounds](#)

Sort

[Relevance](#)

[Date](#)

Popular Searches

[search our digital collections...](#)

[farm](#)

[computer](#)

[search our digital collections...](#)

[native americans in montana](#)

Recent Searches

[coconut](#)



**Coconut Cream Pie** - Amanda Hartsell

[arc.lib.montana.edu/book/home-cooking-history.../item-13.html](http://arc.lib.montana.edu/book/home-cooking-history.../item-13.html)

6 oz **cream** of **coconut**, such as Coco Lopez 10 oz mini marshmallows 1/4 cup milk 3 cups heavy **cream** 2 cups shredded **coconut** 2 tsp **coconut** extract.

[+ more](#)



**Table of Contents** - Montana State University

[arc.lib.montana.edu/book/home-cooking.../table-of-contents.html](http://arc.lib.montana.edu/book/home-cooking.../table-of-contents.html)

Preface by Mary Murphy; **Coconut Cream Pie** by Amanda Hartsell; My Mother's Chocolate Sheet Cake by Angie Keesee; Chicken Noodle Soup by Brandon ...

[+ more](#)

[arc.lib.montana.edu/digital-collections/index.php?q=coconut+cream](http://arc.lib.montana.edu/digital-collections/index.php?q=coconut+cream)

```

"items": [
 {
 "kind": "customsearch#result",
 "title": "Coconut Cream Pie - Amanda Hartsell",
 "htmlTitle": "\u003cb\u003eCoconut Cream\u003c/b\u003e Pie - Amanda Hartsell",
 "link": "http://arc.lib.montana.edu/book/home-cooking-history-409/item-13.html",
 "displayLink": "arc.lib.montana.edu",
 "snippet": "Table of Contents \u003e Recipe and Essay Coconut Cream Pie. Cooking Time: PT6H.
\nCooking Method: mix, refrigerate. Category: dessert. Cuisine Type: American.",
 "htmlSnippet": "Table of Contents > Recipe and Essay \u003cb\u003eCoconut Cream\u003c/b\u003e
Pie. Cooking Time: PT6H. \u003cbr\u003e\nCooking Method: mix, refrigerate. Category: dessert. Cuisine
Type: American.",
 "cacheId": "UYDP4twWC2wJ",
 "formattedUrl": "arc.lib.montana.edu/book/home-cooking-history.../item-13.html",
 "htmlFormattedUrl": "arc.lib.montana.edu/book/home-cooking-history.../item-13.html",
 "pagemap": {
 "Book": [
 {
 "name": "Coconut Cream Pie",
 "creator": "Amanda Hartsell"
 }
],
 "cse_image": [
 {
 "src": "http://upload.wikimedia.org/wikipedia/commons/thumb/8/84/Coconut_cream_pie.jpg/300px-
Coconut_cream_pie.jpg"
 }
],
 "cse_thumbnail": [
 {
 "width": "240",
 "height": "192",
 "src": "https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcTnLhjOI-i2e-
u30bgaJG3yrMbOxi2E6cX7SjA4xMjAza9TH0kkFh5xRVA"
 }
]
 }
],

```

## Google Custom Search Engine JSON API Result

# Getting Started

1. Think about entities you want to surface - type of web page, organization, person, etc.
2. Find those entities in schema.org vocabulary
3. Draft your new markup
  - a. Use Google Structure Data Markup Helper Tool
4. Test your markup in Google Structured Data Testing Tool
5. Publish it on the web.

# Structured Data Testing Tool

Test and validate your Schema.org markup

<http://www.google.com/webmasters/tools/richsnippets>

# Creating/Refining the Searchable Index

- Identify “Noise” and unnecessary pages
- Apply some directives and refining techniques

## Techniques:

1. robots.txt directives
2. meta tag & link relations (index directive markup)
3. sitemaps

# Does your Index Status Make Sense?



About 10,500 results (0.31 seconds)

Google promotion

### [Try Google Webmaster Tools](#)

[www.google.com/webmasters/](http://www.google.com/webmasters/)

Do you own **arc.lib.montana.edu/finding-aids/**? Get indexing and ranking data from Google.

### [Montana Board of Natural Resources and Conservation. Records ...](#)

[arc.lib.montana.edu/finding-aids/item/161](http://arc.lib.montana.edu/finding-aids/item/161) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids located in Special Collections, which are focused on: Montana Agriculture ...

You visited this page on 6/13/13.

### [Manuscript Collection Finding Aids - Montana State University Library](#)

[arc.lib.montana.edu/finding-aids/](http://arc.lib.montana.edu/finding-aids/) ▾

The Manuscript Collection Finding Aids Database has over 335 citations and links to the Manuscript Collection Finding Aids located in Special Collections, ...

### [Behnke, Robert J. Papers, 1957-2000, Item from Manuscript ...](#)

[arc.lib.montana.edu/finding-aids/item/290](http://arc.lib.montana.edu/finding-aids/item/290) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids located in Special Collections, which are focused on: Montana Agriculture ...

### [Atkinson, Alfred. Correspondence Files, 1914-1940, Item from ...](#)

[arc.lib.montana.edu/finding-aids/item/307](http://arc.lib.montana.edu/finding-aids/item/307) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids



About 671 results (0.34 seconds)

Google promotion

### Try Google Webmaster Tools

[www.google.com/webmasters/](http://www.google.com/webmasters/)

Do you own **arc.lib.montana.edu/finding-aids/**? Get indexing and ranking data from Google.

### Montana State University Library Archives Finding Aids ...

[arc.lib.montana.edu/finding-aids/](http://arc.lib.montana.edu/finding-aids/) ▾

Montana State University Library Archives Finding Aids Manuscript Collection Database has over 500 citations with links to the Archives and Special Collections ...

You've visited this page 3 times. Last visit: 7/16/14

### Behnke, Robert J. Papers, 1957-2000, Finding Aid Citation ...

[arc.lib.montana.edu/finding-aids/item/290](http://arc.lib.montana.edu/finding-aids/item/290) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids located in Special Collections, which are focused on: Montana Agriculture ...

### Fulton, Dan. Personal, professional, and research papers ...

[arc.lib.montana.edu/finding-aids/item/201](http://arc.lib.montana.edu/finding-aids/item/201) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids located in Special Collections, which are focused on: Montana Agriculture ...

### Waite, P. C. Papers, 1887-1959, Finding Aid Citation Item ...

[arc.lib.montana.edu/finding-aids/item/33](http://arc.lib.montana.edu/finding-aids/item/33) ▾

Itemized database has citations and links to the Manuscript Collection Finding Aids located in Special Collections, which are focused on: Montana Agriculture ...

# Optimization and Directives

Screenshot 1 - June 28, 2013

10,500 results for [arc.lib.montana.edu/finding-aids/](http://arc.lib.montana.edu/finding-aids/)

Screenshot 2 - July 21, 2013

671 results for [arc.lib.montana.edu/finding-aids/](http://arc.lib.montana.edu/finding-aids/)

# Avoid Diluting PageRank

<http://searchenginewatch.com/article/2316757/Matt-Cutts-on-Linking-Guidelines-How-Many-Links-on-a-Page>

# Creating Indexable Content

## User intuitive hierarchy & site architecture

- Short URLs containing keywords
- Simple directory structure
- Incorporate "Breadcrumbs"
- Single URL to each page
- Easy navigation between homepage and any webpage, and back

“Every page should be reachable from at least one static text link.”

<https://support.google.com/webmasters/answer/35769>

# Reduce “Noise” in the Index

## Implement robots.txt

- text file at top level / root of web site
- Provides SE content exclusion rules

```
Disallow: /staff/
```

```
#allow primary mobile page
```

```
Allow: /finding-aids/m/index.php
```

```
Allow: /finding-aids/m/$
```

# Robots.txt provide crawlers guidance to reduce Index "noise"

## ❖ Test your robots.txt file

```
Disallow: /staff/
Disallow: /admin/
Disallow: /search.php
#allow primary mobile page
Allow: /finding-aids/m/index.php
Allow: /finding-aids/m/$
```

# Reduce “Noise” in the Index

- ❖ Eliminate duplicate content
- ❖ Dynamic pages, search result pages
- ❖ Ensure every page is unique

## Techniques:

1. robots.txt directives
2. meta tag & link relations (index directive markup)
3. sitemaps

# Reduce “Noise” in the Index

## Link relations and index directive markup

- ❖ HTML page <head> markup that provides canonicalization and index exclusion rules

```
<link rel="canonical" href="http://arc.lib.montana.edu/finding-aids/item/23" />
```

```
User Login
```

```
<meta name="robots" content="nofollow,noindex" />
```

# Reduce “Noise” in the Index

- ❖ Prescribe and define your searchable index

## Techniques:

1. robots.txt directives
2. meta tag & link relations (index directive markup)
3. sitemaps

# Creating Indexable Content

- Link a human readable HTML sitemap from homepage
- Implement machine-readable XML file(s) to provide SE content inclusion direction
  - "sitemap index"
  - "sitemap" file(s)

```
<?xml version="1.0" encoding="utf-8"?>
<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9">
<url>
 <loc>http://arc.lib.montana.edu/finding-aids/index.php</loc>
 <lastmod>2014-07-21</lastmod>
 <changefreq>weekly</changefreq>
 <priority>1.0</priority>
</url>
<url>
 <loc>http://arc.lib.montana.edu/finding-aids/about.php</loc>
 <lastmod>2014-07-21</lastmod>
 <changefreq>monthly</changefreq>
 <priority>1.0</priority>
</url>
<url>
 <loc>http://arc.lib.montana.edu/finding-aids/item/1</loc>
 <lastmod>2014-07-21</lastmod>
 <changefreq>weekly</changefreq>
 <priority>0.8</priority>
</url>
<url>
 <loc>http://arc.lib.montana.edu/finding-aids/item/2</loc>
 <lastmod>2014-07-21</lastmod>
 <changefreq>weekly</changefreq>
 <priority>0.8</priority>
</url>
...
</url>
</urlset>
```

# Sitemaps Provide Inclusion Guidance

- ❖ Link a human readable HTML sitemap from homepage
- ❖ Implement machine-readable XML file(s) to provide SE content inclusion direction
  - ◆ "sitemapindex"
  - ◆ "sitemap" file(s)
- ❖ “Google adheres to Sitemap Protocol 0.9 as defined by sitemaps.org.”

# Homework

Semantically Clarify Your Library & Define Your Site Index

[https://docs.google.com/document/d/1wJqe5h6aS-Fc4KGB0aJSTpcMw3\\_GvjncitjujNFEgQ8/edit?usp=sharing](https://docs.google.com/document/d/1wJqe5h6aS-Fc4KGB0aJSTpcMw3_GvjncitjujNFEgQ8/edit?usp=sharing)

SEO Course Moodle instance

<http://www.classes.ala.org/course/view.php?id=537>

# Questions?

[twitter.com/jaclark](https://twitter.com/jaclark)

[www.lib.montana.edu/~jason/talks.php](http://www.lib.montana.edu/~jason/talks.php)