

# Developing an Institutional Repository

## Implementation of DigiTool at Colorado State University Libraries



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Digital Repositories Services



# Background

- CONTENTdm since 2001
- Nearly 4,000 digital objects created in the past
- DigiTool implementation since May 2007; in production since March 2008
- Migrate from CONTENTdm to DigiTool in 2009

# DigiTool Overview

- Modules:
  - Deposit (*user*)
  - Approver (*staff*)
  - Web ingest (*staff*)
  - Collection management (*staff*)
  - Management (*staff*)
- Access and maintenance:
  - Web
  - Meditor (\**Metadata editor*\*)
  - Linux server
    - Customize metadata
    - Customize web interface

# Web Interface Customization

1. What can be customized

- Icons
- Menu
- Footer
- List of sort types

2. What cannot be customized

General page layout

3. Most DigiTool sites look similar

# CSU Digital Repository



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[A to Z](#) | [Site Map](#) | [Search](#)

[Catalog](#) | [Regional Catalog](#) | [Databases](#) | [Journals](#) | [Archives](#) | [Digital Collections](#) | **Repository**

[My Accounts](#) | [Contact Us](#)

## Digital Repository

Research and scholarship of CSU faculty and students

[Search / Browse](#) [Results](#) [Previous Searches](#) [My Account](#) [About](#) [Login](#) [End Session](#) [Help](#)

Guest

[Simple Search](#) [Advanced Search](#)

**A word or phrase:**    
 Contains  Exact  Starts With

**Select collection:**

### Browse Collections

#### [CSU Departments and Schools](#) (476)

[Agricultural and Resource Economics](#) ,  
[Animal Sciences](#) , [Anthropology](#) ...

#### [CSU Colleges](#) (6)

[University Libraries](#)

#### [CSU Centers and Research](#)

##### [Institutes](#) (51)

[Colorado Institute of Public Policy](#) ,  
[Colorado Water Resources Research](#)  
[Institute](#) , [Information Science & Technology Center \(ISTeC\)](#)

#### [CSU Archives](#) (50)

[Board of Governors](#) , [Colorado Agricultural Archive](#) , [University Historic Photograph Collection](#) ...

#### [Student Research Projects](#) (37)

[Celebrate Undergraduate Research and Creativity \(CURC\) Showcase](#)

#### [CSU Conference Proceedings](#) (17)

[Forest Biomass Conference](#)

# Center for Jewish History

CENTER  
FOR JEWISH  
HISTORY

## Digital Collections

[Search or Browse](#) | [Results](#) | [Previous Searches](#) | [My Space](#)



Guest

Simple Search

[Advanced Search](#)

Select collection:

[SEARCH](#)

A word or phrase:

Contains  Exact  Starts With

## Collections

### [Collections by Type](#) (6244)

[Albums & Scrapbooks](#) , [Archival Finding Aids](#)  
[Books](#) ...

### [Center for Jewish History](#) (77)

[Faces of Israel](#) , [A Tour Through Israel](#) ,  
[...And the Air Stood Still: Remembrances](#)

### [YIVO Institute for Jewish Research](#)

(509)

[YIVO Archives](#) , [YIVO Library](#)

### [American Jewish Historical Society](#)

(1398)

[Finding Aids for AJHS's Archival Materials](#) ,  
[Franks Family Papers](#) , [Graduate School for Jewish Social Work Lower East Side](#)  
[Photographic Collection](#) ...

### [Leo Baeck Institute](#) (1109)

[LBI Archives](#) , [LBI Art Collection](#) , [LBI Library](#)  
...

### [American Sephardi Federation](#) (2848)

[Engravings](#) , [Finding Aids for ASF's Archival Materials](#) , [Turkish Synagogues](#)

### [Yeshiva University Museum](#) (330)

[Abe Grubère Collection](#) , [Children's Books](#) ,  
[Finding Aids for YUM's Archival Materials](#) ...

# University of South Florida

LIBRARY HOME

USF HOME | USF SITE MAP | USF SEARCH



[Search](#) | Results | Previous Searches | Collections | My Space



Guest

[Simple Search](#)

[Advanced Search](#)

Select collection: [Search All Collections](#)

**GO**

A word or phrase:

Contains  Exact  Starts With

## Browse Collections

### Floridiana

[Local & Family History](#) , [African American History](#) , [Statewide History](#) ...

### Oral Histories

[Carlton-Anthony OHP](#) , [Florida Citrus OHP](#) , [Tampa Arts and Culture OHP](#) ...

### University Institutional Repository

[Electronic Theses and Dissertations](#) , [Ex Libris: Journal of the USF Library Associates](#) , [University Archives](#)

### Global Solutions

[Karst Information Portal Repository](#) , [Monteverde Institute](#)

### Rare Books & Maps

[Cartography](#) , [Rare Books](#)

### Visual Arts

[Photography](#) , [Printing](#) , [Art and Art History](#) , [\(Saskia\) Collection](#) ...

### Open Access Journals

[Sunland Tribune](#) , [Tampa Bay History](#) , [Theory & Research in Social Education](#)

### Science Fiction and Fantasy

# Boston College

## eScholarship@BC

Boston College Libraries  
[Log On](#)

[Digital Collections](#) [Search](#) [Results](#) [Previous Searches](#) [Settings](#) [Basket](#) [Help](#)

Guest

[Simple Search](#)

[Advanced Search](#)

Select collection:

**GO**

A word or phrase:

Contains  Exact  Starts With

## Collections

[John J. Burns Library Finding Aids](#)  
(48)

[John J. Burns Library Collections](#)  
(1685)

[The Becker Collection](#) (560)

[Media Center Streaming Videos](#) (86)

[The Church in the 21st Century](#) (97)  
Occasional Papers, Webcasts

[Fine Arts Department Digital Images of Art \(BCdia\)](#) (2495)

[Research Unit, Center, or Department](#)  
(381)  
Economics Department

[Dept. of Business Law, Carroll School of Management](#) (11)

# Customization – Caution!

- We purposely chose to limit customization
- Customization should be done by experienced programmers
- Back up before changes are made
- Test on a test server (separate purchase)
- Triple check spelling and syntax. Minor error can crash the system
- Some changes are irreversible
- Restart the system can take up to 5 minutes

# Backup All Files

- Create a shell script to backup all files

```
#!/bin/sh
datetime=`date +%Y.%m%d.%I%M`
backdir=/exlibris/dtl/gvbackup
mkdir $backdir/dc.$datetime
for i in `cat $backdir/dcfiles`
do
    cp -p $i $backdir/dc.$datetime
    cp -p $i $i.$datetime
done
mkdir $backdir/dc.$datetime/help
cp -p /exlibris/dtl/d3_1/dtl/md/descriptive/dc/html/*.html
$backdir/dc.$datetime/help
```

# Customize Metadata Display

- Run a built-in script
  1. Field code: one word, lower case variable name of the field
  2. Field name: display name of the field
  3. name space: dcterms
  4. number of occurrences: 1 (optional unbounded 0\*) for a repeating field like subject, or 2 (optional single 0-1)
  5. help on tag text: a short description of the field
  6. attributes: y
  7. attribute names: leave blank
  8. running method: 1 (run now)

# Files to Update

- Automatically and manually updated files
- E.g. **repository\_indexing\_schema.xml** need to be manually updated

1. 

```
<field index_enabled="true" search_enabled="true" ui_code="313"
ui_default_text="keywords" index_code="313"
normalizing_profiles_ref="generic"> <location type="md"
md_name="descriptive" md_type="dc" path="// dcterms:keywords "/>
</field>
```
2. 

```
<field index_enabled="true" search_enabled="true" ui_code="313"
ui_default_text="keywords" index_code="313"
normalizing_profiles_ref="generic">
<field_path>//dcterms:keywords</field_path> </field>
```

# Edit\_field.eng

- Manually update for web display /print

1      L      313##      D

2                            a A ^

1      L      313##      S

2                            a A ^

# Steps to Customize Metadata Display

## Adding and customizing descriptive DC metadata fields

Also see [Digital Repositories: Customize Metadata](#).

- A list of fields and their properties are at <file:///t:/Digital%20Repositories/documentation/metadata-fields.xls>.
- make a backup of all files by running /exlibris/dtl/gvbackup/dcbackup.sh
- run as dtl by typing dp; add\_new\_dc\_tag.pl CSU01
  1. Field code: one word, lower case variable name of the field
  2. Field name: display name of the field
  3. name space: dcterms
  4. number of occurrences: 1 (optional unbounded 0\*) for a repeating field like subject, or 2 (optional single 0-1)
  5. help or tag text: a short description of the field
  6. attributes: y
  7. attribute names: leave blank
  8. running method: 1 (run now)
- restart PC, Web and Jboss servers
- the add\_new\_dc\_tag.pl script also creates a backup file of files like editor\_conf.xml that are automatically changed. The backups are in the same directory, of the format: editor\_conf.xml.bak.24082007\_103639.
- a log file of changes made by the script is created in /exlibris/dtl/d3\_1/log/add\_new\_dc\_tag\_csu01.log
- /exlibris/dtl/u3\_1/csu01/md/descriptive/dc/editor\_conf.xml - automatic
- /exlibris/dtl/u3\_1/csu01/md/descriptive/dc/full\_dc.xmtn - automatic
- /exlibris/dtl/d3\_1/dtl/md/descriptive/dc/html/dc/terms^newfield\_eng.html - help file - automatic
- /exlibris/dtl/u3\_1/csu01/md/descriptive/dc/dc\_pk - automatic
- /exlibris/dtl/j3\_1/digitool/home/system/conf/repository\_indexing\_schema.xml - manual; reload repository config or restart jboss. There's an error in the log file. You need to add newly created field twice. E.g.

```
<field index_enabled="true" search_enabled="true" ui_code="313" ui_default_text="keywords" index_code="313" normalizing_profiles_ref="generic"><location type="md" md_name="descriptive" md_type="dc" path="//dc/terms:keywords"/></field> <field index_enabled="true" search_enabled="true" ui_code="313" ui_default_text="keywords" index_code="313" normalizing_profiles_ref="generic"><field_path>//dc/terms:keywords</field_path></field>
```

- /exlibris/dtl/u3\_1/gen01/tab/harvesting\_schema.xml - manual, for indexing in RD

- You need to add the newly created field only once in this file.
- Note !!! Make sure normalizing\_profiles\_ref="empty" NOT normalizing\_profiles\_ref="generic". If generic is used, metadata will be converted into lower case and concatenated together. E.g.:

```
<field index_enabled="true" search_enabled="true" ui_code="313" ui_default_text="doc-313" index_code="313" normalizing_profiles_ref="empty"><location type="md" md_name="descriptive" md_type="dc" path="//dcterms:keywords"/></field>
```

- /exlibris/dtl/u3\_1/dtlet/tab/tbl12 - automatic
- /exlibris/dtl/u3\_1/gen01/tab/tbl01.eng - automatic, for indexing in RD. This file contains numbers (ui\_code) associated with metadata which are referenced in /exlibris/dtl/u3\_1/gen01/tab/www\_r\_silo\_conf.xml
- /exlibris/dtl/u3\_1/gen01/tab/tbl00.eng - manual, for indexing in RD. "H W-030 00 00 W-CSU Custom Fields" is added already. Don't need to update this file.
- /exlibris/dtl/u3\_1/gen01/tab/tbl11\_word - automatic, manual for indexing in RD. Need to add WNF to the end of the newly added line e.g. 312## a 03 WRD WNF.
- Run p\_manage\_01 indexing service - available from Meditor Services Menu - for changes to above 4 files (documentation suggests this but we have never actually tried it)
- /exlibris/dtl/u3\_1/gen01/tab/www\_r\_silo\_conf.xml - manual, for displaying in RD search results (brief, full or column)
- /exlibris/dtl/u3\_1/gen01/tab/tbl\_sort - manual, for sorting in RD and meditor, usually not done
- /exlibris/dtl/j3\_1/digitool/home/system/wsl/digital\_entity/dc\_marc\_functions.xsl - manual, for displaying in RD item viewer; restart is not necessary. This file defines the label and position of the new field in the item viewer. Copy an existing block of code and change the name field (2x). E.g.:

```
<xsl:for-each select="//dc/terms:metadataschema"><xsl:variable name="sr" select="Metadata Schema"/> ...(&conf'd)...
```

- /exlibris/dtl/u3\_1/gen01/tab/edit\_doc\_999.eng - manual, for printing, saving and link viewing from Meditor
- /exlibris/dtl/u3\_1/gen01/tab/edit\_field.eng - manual, for web display/print. e.g. after added etd\_school add these lines to the previously added customized metadata

```
1 L 312## D          a A ^  
2  
1 L 312## S          a A ^  
2
```

# Permanent URL

<http://hdl.handle.net/10217/1552>



	<b>Object</b>	Recommended animal handling guidelines f... - PDF Document (3 M)
	<b>Bookmarkable URL</b>	<a href="http://hdl.handle.net/10217/1552">http://hdl.handle.net/10217/1552</a>
	<b>Authors</b>	Grandin, Temple
	<b>Title</b>	Recommended animal handling guidelines for meat packers
	<b>Subjects</b>	Livestock — Handling
	<b>Description</b>	Proper livestock handling is extremely important to meat packers for obvious ethical reasons. Once livestock arrive at packing plants, proper handling procedures are not only important for the animals' well-being, but can also mean the difference between profits and losses due to meat quality or worker safety. The Humane Slaughter Act of 1978 dictates strict animal handling and slaughtering standards for packing plants. Those standards are monitored by some 7,000 federal meat inspectors nation-wide. The meat packing industry takes these standards very seriously. For the best results in animal handling, plant management must make proper handling and stunning a high priority. Top management must play an active role. Plants with the best handling and stunning practices have managers who closely monitor stunning and handling practices. This manual provides employees and managers with information which will help them improve both handling and stunning. Employees handling hundreds of animals day after day sometimes need reminders from management that animals must always be handled carefully.



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# Metadata Approaches

- Display all DC. Ingest mostly DC XML files
- Batch upload
  - CONTENTdm: export > .csv + mapping xml > ingest
  - New metadata: Excel > .csv + mapping xml > ingest
- Repurpose MARC
  - Export > MarcEdit (add 856) > MARCXML > Ingest
- METS (compound objects)
  - Arrange > Ingest > Utility > Edit (Oxygen) > Ingest
- Use Meditor for minor changes or creating md for a single digital object

# DC XML example

```
<records>
```

```
<!-- 1 -->
```

```
<record xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:dcterms="http://purl.org/dc/terms/">

  <dc:creator>Ott, Brian L.</dc:creator>

  <dc:title>Bridging scholarly theory and forensic practice: toward a more pedagogical model of rhetorical criticism</dc:title>

  <dcterms:alternative></dcterms:alternative>

  <dcterms:college></dcterms:college>

  <dcterms:etd_department>Speech Communication</dcterms:etd_department>

  <dcterms:keywords>rhetorical criticism ; communication analysis ; RC model ; CA ; forensic practice</dcterms:keywords>

  <dcterms:abstract>In this essay, the author contends that competitors in the event of rhetorical criticism, or communication analysis (CA) as it is alternati</dcterms:abstract>

  <dcterms:originalpublisher>National Forensic Association</dcterms:originalpublisher>

  <dc:publisher>Colorado State University. Libraries</dc:publisher>

  <dcterms:bibliographicCitation>National Forensic Journal 16, no. 1 and 2 (Fall/Spring 1998): [53]-74</dcterms:bibliographicCitation>

  <dcterms:issued>1998</dcterms:issued>

  <dc:type>text</dc:type>
```



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Object	 Bridging scholarly theory and forensic p... - PDF Document (97 K)
Bookmarkable URL	<a href="http://hdl.handle.net/10217/643">http://hdl.handle.net/10217/643</a>
Authors	Ott, Brian L.
Title	Bridging scholarly theory and forensic practice: toward a more pedagogical model of rhetorical criticism
Keywords	rhetorical criticism ; communication analysis ; RC model ; CA ; forensic practice
Abstract	In this essay, the author contends that competitors in the event of rhetorical criticism, or communication analysis, have been too narrow in their focus about the educational value of the event. In an effort to narrow the ever widening gap between theory and practice, the author proposes to chart briefly the chief features of the existing RC model, to identify the limitations posed by that model, and to propose a more pedagogical model of rhetorical criticism.
Original Publisher	National Forensic Association
Publisher	Colorado State University. Libraries
Citation	National Forensic Journal 16, no. 1&2 (Fall/Spring 1998): [53]-74
Date	1998
Department	Speech Communication
Related collections	<a href="#">CSU Departments and Schools</a> > <a href="#">Speech Communication</a> > <a href="#">Faculty Publications</a>

# Metadata in Excel

	A	B	C	D	E	F	G	H	I
1	Master File Name	Identifier	File Name	Title	Relation IsFormatOf	Description	Relation IsF Source	Cover	
2	UHPC_1.tif	UHPCS060100017	UHPC_1.jp2	"School Trustee" Annual insp	Negative #1. "School Tr	Man with beard star	University Hi	Original: m	Colorado
3	UHPC_10.tif	UHPCS060200178	UHPC_10.jp2	[School, Mountain Scene]	Negative #10. [School,	Three photographs	University Hi	Original: m	Colorado
4	UHPC_11.tif	UHPCS060200115	UHPC_11.jp2	[Schoolhouse]	Negative #11. [Schoolho	Log cabin schoolho	University Hi	Original: m	Colorado
5	UHPC_2.tif	UHPCS060100015	UHPC_2.jp2	"An Educational Scrap Heap	Negative #2. "An Educati	Collage of pictures	University Hi	Original: m	Colorado
6	UHPC_2-4.tif	UHPCS060200129	UHPC_2-4.jp2	The Old Way. [man in ox ca	Negative #2/4. The Old V	Two red and white c	University Hi	Original: m	Colorado
7	UHPC_2a.tif	UHPCS060200114	UHPC_2a.jp2	District No. 1 Larimer County	Negative #2. District No.	Sixteen children an	University Hi	Original: m	Larimer Co
8	UHPC_3.tif	UHPCS060200173	UHPC_3.jp2	SLV Champs [football]	Negative #3. SLV Champ	Eighteen men dress	University Hi	Original: m	Colorado
9	UHPC_3a.tif	UHPCS060200174	UHPC_3a.jp2	[Barn]	Negative #3. [Barn].	One large barn in c	University Hi	Original: m	Colorado
10	UHPC_3b.tif	UHPCS060200170	UHPC_3b.jp2	[Train and schoolhouse]	Negative #3. [Train and	Train engine #1501	University Hi	Original: m	Colorado
11	UHPC_4.tif	UHPCS03J100004	UHPC_4.jp2	[In the Auditorium]	Negative #4. [In the Audi	An auditorium full of	University Hi	Original: m	Colorado
12	UHPC_5.tif	UHPCS060100011	UHPC_5.jp2	The District School belongs	Negative #5. The District	Two images, one of	University Hi	Original: m	Colorado
13	UHPC_5a.tif	UHPCS060100013	UHPC_5a.jp2	[Schoolhouse]	Negative #5 [Schoolhou	A schoolhouse with	University Hi	Original: m	Colorado
14	UHPC_5b.tif	UHPCS060100012	UHPC_5b.jp2	The District School belongs	Negative #5. The District	Two images, one of	University Hi	Original: m	Colorado
15	UHPC_5c.tif	UHPCS060100014	UHPC_5c.jp2	[Built structure]	Negative #5. [Built struct	Unidentified single	University Hi	Original: m	Colorado
16	UHPC_5d.tif	UHPCS03J100005	UHPC_5d.jp2	[The Northern Hotel, LaPorte	Negative #5. [The Northe	The front of the Nort	University Hi	Original: m	Fort C
17	UHPC_6.tif	UHPCS060200171	UHPC_6.jp2	Rural Education supported b	Negative #6 Rural Educa	Two young boys sta	University Hi	Original: m	Colorado
18	UHPC_7.tif	UHPCS03J100006	UHPC_7.jp2	[Stock Judging]	Negative #7. [Stock Judg	Eight men standing	University Hi	Original: m	Fort C
19	UHPC_7-2.tif	UHPCS060200175	UHPC_7-2.jp2	The Old Way [man in ox car	Negative #7/2. The Old V	Two red and white c	University Hi	Original: m	Colorado
20	UHPC_8.tif	UHPCS060200176	UHPC_8.jp2	[School building and school	Negative #8. [School buil	Group of students a	University Hi	Original: m	Colorado
21	UHPC_9.tif	UHPCS060200177	UHPC_9.jp2	Loma Consolidated School:	Negative #9. Loma Cons	Photograph of three	University Hi	Original: m	Colorado
22									
23									
24									
25									
26									
27									
28									
29									
30									



# .CSV file

Master File Name,Identifier ,File Name,Title,Relation IsFormatOf,Description,Relation IsPartOf,Source,Coverage Spatial,Date Or  
UHPC\_1.tif,UHPCS060100017,UHPC\_1.jp2,""School Trustee"" Annual inspection,Negative #1. ""School Trustee"" Annual inspection.  
UHPC\_10.tif,UHPCS060200178,UHPC\_10.jp2, "[School, Mountain Scene]","Negative #10. [School, Mountain Scene]. undated","Three ph  
UHPC\_11.tif,UHPCS060200115,UHPC\_11.jp2,[Schoolhouse],Negative #11. [Schoolhouse]. undated,"Log cabin schoolhouse with wagon in  
UHPC\_2.tif,UHPCS060100015,UHPC\_2.jp2,""An Educational Scrap Heap"" ,Negative #2. ""An Educational Scrap Heap."" undated,Coll  
UHPC\_2-4.tif,UHPCS060200129,UHPC\_2-4.jp2,The Old Way. [man in ox cart],Negative #2/4. The Old Way. [man in ox cart]. undated  
UHPC\_2a.tif,UHPCS060200114,UHPC\_2a.jp2,District No. 1 Larimer County [school house] ,Negative #2. District No. 1 Larimer Cour  
UHPC\_3.tif,UHPCS060200173,UHPC\_3.jp2,SLV Champs [football],Negative #3. SLV Champs [football]. 1920,"Eighteen men dressed in  
UHPC\_3a.tif,UHPCS060200174,UHPC\_3a.jp2,[Barn],Negative #3. [Barn]. undated,One large barn in center of photograph with a horse  
UHPC\_3b.tif,UHPCS060200170,UHPC\_3b.jp2,[Train and schoolhouse],Negative #3. [Train and schoolhouse]. undated,"Train engine #15  
UHPC\_4.tif,UHPCS03J100004,UHPC\_4.jp2,[In the Auditorium],Negative #4. [In the Auditorium]. undated,"An auditorium full of peop  
UHPC\_5.tif,UHPCS060100011,UHPC\_5.jp2,The District School belongs with the spinning wheel,Negative #5. The District School belo  
UHPC\_5a.tif,UHPCS060100013,UHPC\_5a.jp2,[Schoolhouse],Negative #5 [Schoolhouse]. undated,A schoolhouse with children and adults  
UHPC\_5b.tif,UHPCS060100012,UHPC\_5b.jp2,The District School belongs with the spinning wheel,Negative #5. The District School be  
UHPC\_5c.tif,UHPCS060100014,UHPC\_5c.jp2,[Built structure],Negative #5. [Built structure]. undated,Unidentified single story buil  
UHPC\_5d.tif,UHPCS03J100005,UHPC\_5d.jp2, "[The Northern Hotel, LaPorte Ave./Walnut and College Ave.]","Negative #5. [The Norther  
UHPC\_6.tif,UHPCS060200171,UHPC\_6.jp2,Rural Education supported by a spruce pole,Negative #6 Rural Education supported by a spr  
UHPC\_7.tif,UHPCS03J100006,UHPC\_7.jp2,[Stock Judging],Negative #7. [Stock Judging]. undated,"Eight men standing or kneeling nex  
UHPC\_7-2.tif,UHPCS060200175,UHPC\_7-2.jp2,The Old Way [man in ox cart],Negative #7/2. The Old Way [man in ox cart]. undated,Tw  
UHPC\_8.tif,UHPCS060200176,UHPC\_8.jp2,[School building and school children],Negative #8. [School building and school children].  
UHPC\_9.tif,UHPCS060200177,UHPC\_9.jp2,Loma Consolidated School: The Old and the New,Negative #9. Loma Consolidated School: The

# Mapping XML

```
<?xml version="1.0" encoding="utf-8"?>
<tm:x_mapping
  xmlns:tm="http://com/exlibris/digitool/repository/transMap/xmlbeans"
  start_from_line="2">

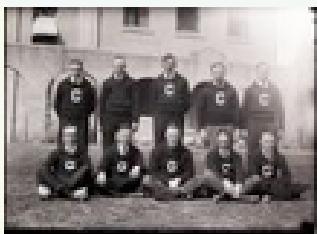
  <x_map>
    <x_source position="1"/>
    <x_target md_name="descriptive" md_type="dc">
      dc:identifier
    </x_target>
  </x_map>

  <x_map>
    <x_source position="2"/>
    <x_target md_name="descriptive" md_type="dc">
      dc:identifier
    </x_target>
  </x_map>

  <x_map>
    <x_source position="4"/>
    <x_target md_name="descriptive" md_type="dc">
      dc:title
    </x_target>
  </x_map>

  <x_map>
    <x_source position="5"/>
    <x_target md_name="descriptive" md_type="dc">
      dcterms:isFormatOf
    </x_target>
  </x_map>
```





<b>Object</b>	 - JPEG2000 Image (9 M)
<b>Bookmarkable URL</b>	<a href="http://hdl.handle.net/10217/4987">http://hdl.handle.net/10217/4987</a>
<b>Authors</b>	Colorado State University
<b>Title</b>	"A" Club
<b>Subjects</b>	Colorado Agricultural College -- Students Student activities -- Colorado -- Fort Collins Colorado Agricultural College. A Club
<b>Description</b>	Ten men standing and seated for group picture taken outside of a building.
<b>Publisher</b>	Colorado State University. Libraries
<b>Date</b>	1922
<b>Series</b>	University Historic Photograph Collection, Archives and Special Collections, Colorado State University <a href="http://lib.colostate.edu/archives/findingaids/university/uhcp.html">http://lib.colostate.edu/archives/findingaids/university/uhcp.html</a>
<b>Related collections</b>	<a href="#">CSU Archives</a> > <a href="#">University Historic Photograph Collection</a> > <a href="#">Glass Plate Negatives</a>

# MARC XML Example

```
<?xml version="1.0" encoding="UTF-8" ?>
<marc:collection xmlns:marc="http://www.loc.gov/MARC21/slim" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.loc.gov/MARC21/slim http://www.loc.gov/MARC21/slim.xsd">

    <!-- first record -->
    <marc:record><marc:leader>00915nam a2200229la 4500</marc:leader>

    <marc:controlfield tag="001">ocm64638053</marc:controlfield>
    <marc:controlfield tag="003">OCOLOC</marc:controlfield>
    <marc:controlfield tag="005">20060313024921.0</marc:controlfield>
    <marc:controlfield tag="008">060313s2005 coua b s000 0 eng d</marc:controlfield>

    <marc:datafield tag="040" ind1="" ind2="">
        <marc:subfield code="a">COF</marc:subfield>
        <marc:subfield code="c">COF</marc:subfield>
    </marc:datafield>

    <marc:datafield tag="049" ind1="" ind2="">
        <marc:subfield code="a">COF&[CO DOC]</marc:subfield>
        <marc:subfield code="a">COFE</marc:subfield>
        <marc:subfield code="a">CO9D</marc:subfield>
    </marc:datafield>

    <marc:datafield tag="090" ind1="" ind2="">
        <marc:subfield code="a">QC852</marc:subfield>
        <marc:subfield code="b">.C6 no.764</marc:subfield>
    </marc:datafield>

    <marc:datafield tag="856" ind1="0" ind2="0">
        <marc:subfield code="u">0764_Bluebook.pdf</marc:subfield>
    </marc:datafield>

    <marc:datafield tag="100" ind1="1" ind2="">
        <marc:subfield code="a">Stokowski, David.</marc:subfield>
    </marc:datafield>

    <marc:datafield tag="245" ind1="1" ind2="4">
        <marc:subfield code="a">The addition of the direct radiative effect of atmospheric aerosols into the Regional Atmospheric Modeling System (RAMS) /<marc:subfield code="c">by David Stokowski ; William R. Cotton, P.L.</marc:subfield>
    </marc:datafield>
```

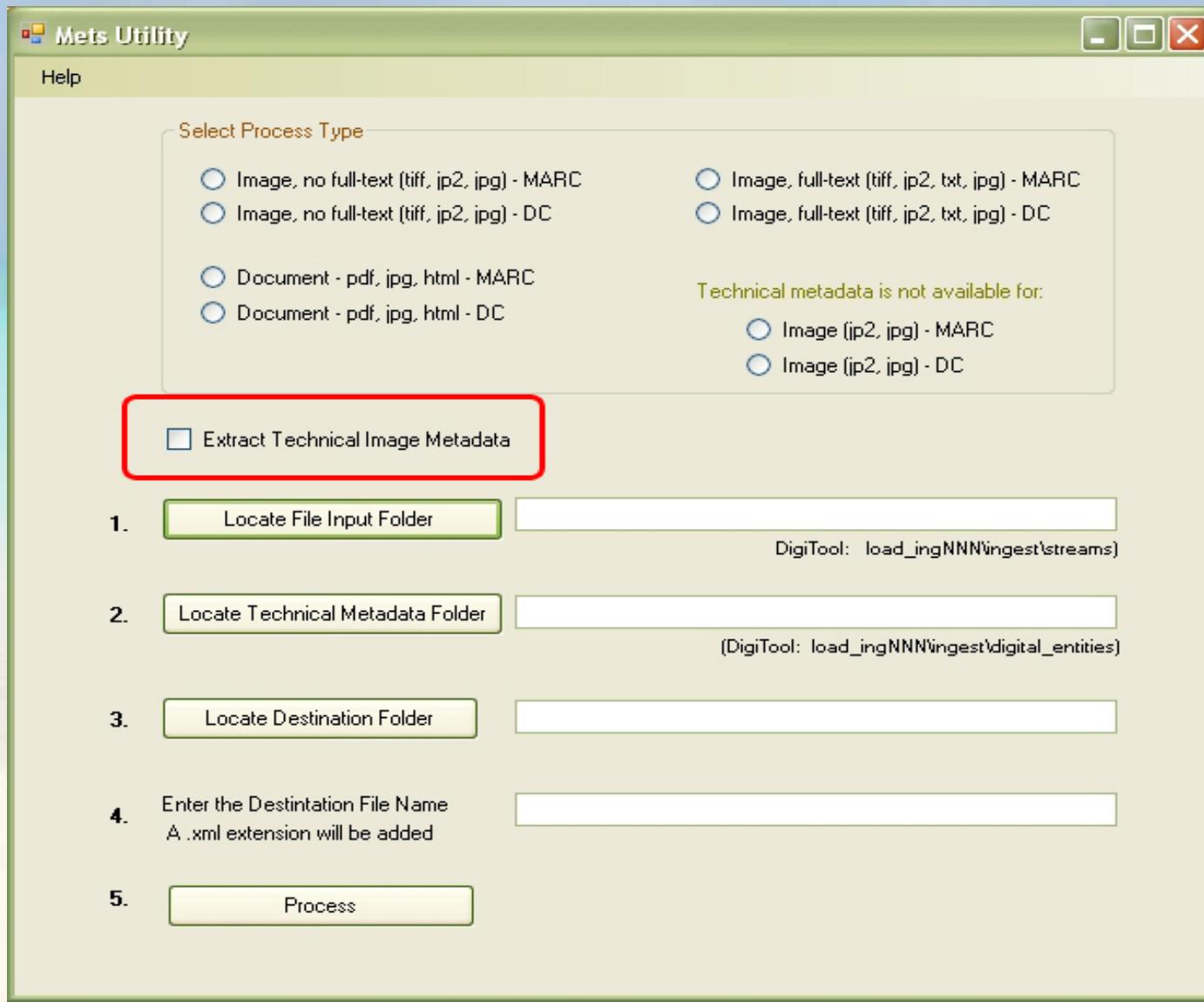


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<b>Object</b>	 <a href="#">PDF</a>	Complementary relationship in the estima... - PDF Document (1 M)
<b>Bookmarkable URL</b>	<a href="http://hdl.handle.net/10217/4210">http://hdl.handle.net/10217/4210</a>	
<b>Authors</b>	Hobbins, Mike.	
<b>Title</b>	Complementary relationship in the estimation of regional evapotranspiration : an enhanced a	
<b>Subjects</b>	Evaporation (Meteorology)--United States. Evapotranspiration--United States.	
<b>Description</b>	Includes bibliographical references.	
<b>Publisher</b>	Colorado Water Resources Research Institute,	
<b>Date</b>	2000?.	
<b>Extent</b>	1 PDF (59 p. : ill. ; 1.64 MB)	
<b>Series</b>	Open file report (Colorado Water Resources Research Institute) ; no. 13.	
<b>Related collections</b>	<a href="#">CSU Centers and Research Institutes</a> > <a href="#">Colorado Water Institute</a> > <a href="#">Open File Reports</a>	

# METS (Metadata Encoding & Transmission Standard) Utility



# METS Example

```
<mets PROFILE="http://www.exlibris.co.il/digitool/xsd/exlibris_mets_profile_v1.0.xml" TYPE="document" OBJID="us::csu::AGSS_mets.xml" LABEL="Further perspectives: anthropological views of the world, vol. 2, 2008">
<metsHdr>
<agent ROLE="CREATOR" TYPE="ORGANIZATION">
<name>Colorado State University</name>
</agent>
</metsHdr>
<dmdSec ID="dmd001">
<mdWrap MDTYPE="DC" MIMETYPE="text/xml" LABEL="Dublin Core Metadata">
<xmlData>
<dc:record xmlns:dc="http://purl.org/dc/elements/1.1" xmlns:dcterms="http://purl.org/dc/terms/">
<dc:creator>Anthropology Graduate Student Society (Colorado State University)</dc:creator>
<dc:title>Furthering perspectives: anthropological views of the world, vol. 2, 2008</dc:title>
<dcterms:tableOfContents>Contains seven articles:<br />
    "Gender and power in childbirth discourse: an analysis of two popular books", by April Biasioli;<br />
    "Indigenous land rights in the Amazon: a landscape approach", by Kristina Pearson;<br />
    "Shattered dreams: insanity and the implications of loneliness, isolation, and the failed promises of the American frontier", by Leslie Johnson;<br />
    "Gender and sexuality construction, as informed by Hip Hop Kulture within the African American community", by Andrew Kumar;<br />
    "Mormon women: negotiating identities in the face of conflicting demands", by Henri Jean-Francois Dengah II;<br />
    "Vertical analysis of four units of debitage from the Kinney Spring Site (5LR144c): a multiple occupation site in northeastern Colorado", by Heather F. Graham;<br />
    "Incentives of a commuter cycling community", by Melanie Graham.</dcterms:tableOfContents>
<dcterms:originalpublisher>Anthropology Graduate Student Society (Colorado State University)</dcterms:originalpublisher>
<dc:publisher>Colorado State University. Libraries</dc:publisher>
<dcterms:isPartOf>Furthering perspectives: anthropological views of the world (ISSN 1941-1731)</dcterms:isPartOf>
<dcterms:issued>2008</dcterms:issued>
<dc:type>Text; Still image</dc:type>
<dc:format>application/pdf</dc:format>
<dc:identifier>JOUFFPAV100001AGSS</dc:identifier>
<dc:language>eng</dc:language>
<dc:language>English</dc:language>
<dc:rights>c2008 Anthropology Graduate Student Society (Colorado State University)</dc:rights>
<dcterms:metadataschema>CSU Journals 1.0</dcterms:metadataschema>
</dc:record>
</xmlData>
</mdWrap>
</dmdSec>
</mets>
```

# METS Example

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<fileSec>
  <fileGrp USE="reference" VERSDATE="2008-05-19T11:07:00">
    <mets:file ID="s001" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="792506" SEQ="1" GROUPID="gid001">
      <FLocat xlink:href="file://streams/100_AGSS_2008_vol_2_Cover.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s002" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="254893" SEQ="2" GROUPID="gid002">
      <FLocat xlink:href="file://streams/101_AGSS_2008_vol_2_Biasioli.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s003" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="270239" SEQ="3" GROUPID="gid003">
      <FLocat xlink:href="file://streams/102_AGSS_2008_vol_2_Pearson.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s004" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="102764" SEQ="4" GROUPID="gid004">
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    </mets:file>
    <mets:file ID="s005" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="197365" SEQ="5" GROUPID="gid005">
      <FLocat xlink:href="file://streams/104_AGSS_2008_vol_2_Kumar.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s006" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="226262" SEQ="6" GROUPID="gid006">
      <FLocat xlink:href="file://streams/105_AGSS_2008_vol_2_Dengah.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s007" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="511665" SEQ="7" GROUPID="gid007">
      <FLocat xlink:href="file://streams/106_AGSS_2008_vol_2_Horobik.pdf" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="s008" MIMETYPE="application/pdf" CREATED="2008-05-19T10:22:19" SIZE="201516" SEQ="8" GROUPID="gid008">
      <FLocat xlink:href="file://streams/107_AGSS_2008_vol_2_Graham.pdf" LOCTYPE="URL" />
    </mets:file>
  </fileGrp>
  <fileGrp USE="thumbnail" VERSDATE="2008-05-19T11:07:00">
    <mets:file ID="t001" MIMETYPE="image/jpeg" CREATED="2008-05-19T10:23:04" SIZE="26183" SEQ="1" GROUPID="gid001">
      <FLocat xlink:href="file://streams/_100_AGSS_2008_vol_2_Cover_pdf_thumbnail.jpg" LOCTYPE="URL" />
    </mets:file>
    <mets:file ID="t002" MIMETYPE="image/jpeg" CREATED="2008-05-19T09:29:14" SIZE="16500" SEQ="2" GROUPID="gid002">
      <FLocat xlink:href="file://streams/_101_AGSS_2008_vol_2_Biasioli_pdf_thumbnail.jpg" LOCTYPE="URL" />
    </mets:file>
  </fileGrp>
```

# METS Example

```
<structMap TYPE="PHYSICAL" ID="smd001">
  <div ORDER="1" ID="Auto_Generated_Qualifier_STRUCTMAP" TYPE="document" LABEL="Furthering perspectives: anthropological views of the world"
    <div TYPE="document" LABEL="Cover, table of contents, and editor's note" ORDER="1">
      <fptr FILEID="s001" />
      <fptr FILEID="t001" />
      <fptr FILEID="i001" />
    </div>
    <div TYPE="document" LABEL="Gender and power in childbirth discourse: an analysis of two popular books" ORDER="2">
      <fptr FILEID="s002" />
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      <fptr FILEID="i002" />
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    <div TYPE="document" LABEL="Indigenous land rights in the Amazon: a landscape approach" ORDER="3">
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      <fptr FILEID="i003" />
    </div>
    <div TYPE="document" LABEL="Shattered dreams: insanity and the implications of loneliness, isolation, and the failed promises of the American frontiers"
      <fptr FILEID="s004" />
      <fptr FILEID="t004" />
      <fptr FILEID="i004" />
    </div>
    <div TYPE="document" LABEL="Gender and sexuality construction, as informed by Hip Hop Kulture within the African American community" ORDER="5">
      <fptr FILEID="s005" />
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    </div>
    <div TYPE="document" LABEL="Mormon women: negotiating identities in the face of conflicting demands" ORDER="6">
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      <fptr FILEID="t006" />
      <fptr FILEID="i006" />
    </div>
    <div TYPE="document" LABEL="Vertical analysis of four units of debitage from the Kinney Spring Site (5LR144c): a multiple occupation site in northeastern Colorado" ORDER="7">
      <fptr FILEID="s007" />
    </div>
```



# METS Example

```
<structMap TYPE="Logical" ID="smd001">
<div ORDER="1" ID="MANUAL_GENERATED_STRUCTMAP" TYPE="document" LABEL="CSU Board of Governors 2004 meeting agendas and minutes"
  xmlns:mets="http://www.loc.gov/METS/"
  xmlns:mods="http://www.loc.gov/mods/"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://www.loc.gov/METS" >
  <div ID="div1.1" LABEL="February 3" TYPE="document" ORDER="1">
    <div LABEL="Agenda" TYPE="document" ORDER="1">
      <fptr FILEID="s001" />
      <fptr FILEID="t001" />
      <fptr FILEID="i001" />
    </div>
    <div LABEL="Minutes" TYPE="document" ORDER="2">
      <fptr FILEID="s002" />
      <fptr FILEID="t002" />
      <fptr FILEID="i002" />
    </div>
  </div>
  <div ID="div1.2" LABEL="March 17" ORDER="2">
    <div LABEL="Agenda" TYPE="document" ORDER="1">
      <fptr FILEID="s003" />
      <fptr FILEID="t003" />
      <fptr FILEID="i003" />
    </div>
    <div LABEL="Minutes" TYPE="document" ORDER="2">
      <fptr FILEID="s004" />
      <fptr FILEID="t004" />
      <fptr FILEID="i004" />
    </div>
  </div>
  <div ID="div1.3" LABEL="May 5" ORDER="3">
    <div LABEL="Agenda" TYPE="document" ORDER="1">
      <fptr FILEID="s005" />
```

Current View: (PHYSICAL)

Show MetaData for: [Events - Conventions/Conferences - Exhibits]

>> Events - Conventions > Conferences - Exhibits

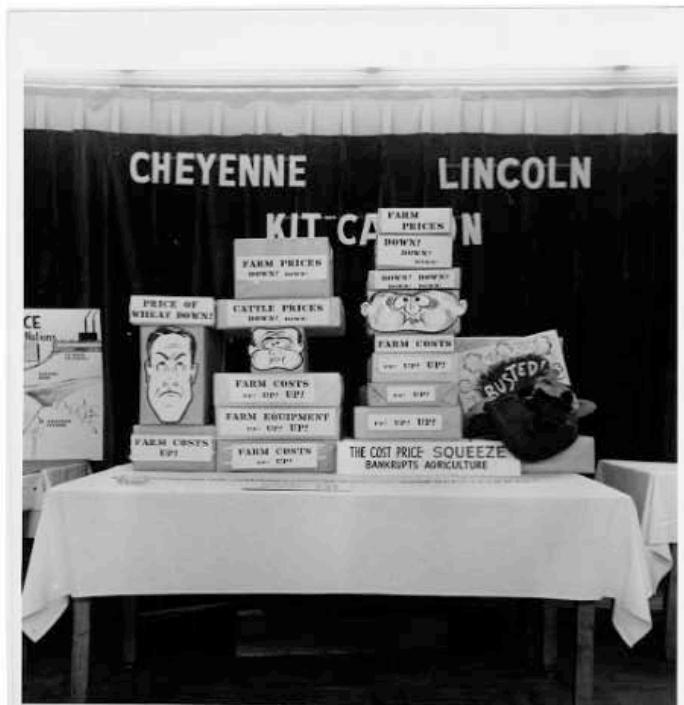
- ① [Events - Conventions/Conferences -](#)
  - [Cheyenne, Lincoln, and Kit Carson...](#)
  - [Sedgwick, Phillips, and Logan counties...](#)
  - [San Luis Valley and Chaffee counties...](#)
  - [Sheridan, Campbell, Weston, and Cook...](#)
  - [Washington and Yuma counties booth at...](#)
  - [Exhibit by Mount Sopris Farmers Union at...](#)
  - [Farmers Union Central exchange booth at...](#)

No metadata

View options: [\[PDF\]](#)



Cheyenne, Lincoln, and Kit Carson counties booth at RMFU convention



&gt;&gt; CSU Board of Governors 2007 meeting agendas, minutes, and collateral materials &gt; February 7 &gt; Agenda

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Colorado State University System  
 Board of Governors Meeting – Agenda  
 February 7, 2007  
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**AGENDA**

**BOARD OF GOVERNORS MEETING**

February 7, 2007

Northeastern Junior College  
Tennant Art Gallery  
100 College Avenue  
Sterling, Colorado

Tuesday, February 6, 2007

<b>HOTEL:</b> Best Western Sundowner 125 Overland Trail Sterling, Colorado 80751 (970) 522-6265 phone (970) 522-6265 fax Check in time: 3pm Check out time: 11am	1:00 pm      Tour of Ethanol Plant (Optional) Board Members and Special Guests @ 450 Angus Avenue, Sterling, CO
	2:30 – 5:00 pm      Panel: Critical Issues Facing Colorado, CSU & 21 <sup>st</sup> Century Agriculture Town Hall: Table Groups Board Members and Special Guests @ Northeastern Junior College Tennant Art Gallery 100 College Avenue, Sterling, CO
	6:00 – 7:30 pm      Invitational Reception Logan County/Northeast Colorado Community Leaders, Agricultural Leaders, as well as CSU Alumni @ Sterling Country Club 17408 Highway 14, Sterling, CO
	7:30 pm      Dinner on your own Recommended Restaurants: <ul style="list-style-type: none"> <li>• Atwood Steak House, Interstate 76 &amp; Atwood exit (63 interchange) - 970.522.7088</li> <li>• Dewey's Bar &amp; Grille, 41611 Marble Ave, Stoneham, CO 80705.2747 - (23 miles west of Sterling, family owned restaurant, old building, lots of antiques)</li> </ul>

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Handle	PID	OAI	Meta Data	Item +MD	Full View	Item View	Title (Item View)	Creator	Subject	Date	Identifier
556	4612	OAI	Meta	I+M	Full 0	Item 83	<a href="#">Conocimiento e impedimentos de Metodos Anticonceptivos: Las Mujeres del Centro de Salud en Cerro Verde, Cochabamba, BoliviaKnowledge of and Impediments to Contraception: Cerro Verde, Cochabamba, Bolivia</a>	King, Erin M.	Contraception -- Bolivia Birth control -- Bolivia	2004	STUF2004100009CURC
780	5261	OAI	Meta	I+M	Full 43	Item 62	<a href="#">Journal of student affairs, vol. XVII (17), 2007–2008</a>	Colorado State University. Student Affairs in Higher Education	Student affairs services -- United States Student affairs administrators -- Training of -- Colorado -- Fort Collins	2008	SAHE_2008.pdf JOUFJOSA100001EDUC

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# Conclusions

- Implementing an IR is a team effort:
  - regular staff meetings at the beginning
- DigiTool:
  - requires a relatively shorter implementation period
  - relatively easy to use
  - Less tech support needed once established
  - Batch ingest is great
  - Handle, API useful
- Nearly 3,000 items since implementation



<http://digitool.library.colostate.edu/R>