Transforming and enhancing metadata for enduser discovery: a case study

Edward M. Corrado
Director of Library Technology
ecorrado@binghamton.edu

Rachel Jaffe
Metadata Catalog Librarian
rjaffe@binghamton.edu
Binghamton University, one of four comprehensive doctoral research universities within the State University of New York, is recognized for stellar academics, an international focus, high graduation rates and overall value.

- Undergraduates: 12,356
- Graduate students: 2,952
- Average SAT score range: 1220-1385
- Average ACT score range: 27-30
- Top 25% of high school class: 87.9%
- In the past 10 years, 91% of freshmen returned for their sophomore year
- Students of color: 28%
- International students: 15%

Students come from 45 states and 100 countries
Digital Preservation & Resource Discovery @ Binghamton

Discovery Layer

Primo

Rosetta
Digital Preservation System

Primo Central

Aleph
ILS
Digital Projects @ Binghamton

Rosetta

Corpse Flower to Cause a Big Stink at Binghamton
Digital Projects @ Binghamton

Rosetta

Metadata

Metadata

Metadata
University Photographs Collection:
University Photographer’s Workflow
University Photographs Collection:

University Photographer’s Workflow

<table>
<thead>
<tr>
<th>Description</th>
<th>IPTC</th>
<th>Camera Data</th>
<th>Video Data</th>
<th>Audio Data</th>
<th>Mobile SWF</th>
<th>Categories</th>
<th>Origin</th>
<th>DICOM</th>
<th>History</th>
<th>Illustrator</th>
</tr>
</thead>
</table>

**Document Title:**

**Author:** JONATHAN COHEN

**Author Title:** UNIVERSITY PHOTOGRAPHER

**Description:** JONATHAN COHEN/BINGHAMTON UNIVERSITY

The Binghamton University student section cheers for the Men's Soccer team during a game with the University of Rhode Island.

**Rating:** ★ ★ ★ ★ ★

**Description Writer:** JC

**Keywords:** 2009; events; on campus; homecoming; fans; students; spectators; soccer; varsity; mens; athletics; cheer; celebrate; scream

©️ Semicolons or commas can be used to separate multiple values

**Copyright Status:** Copyrighted

**Copyright Notice:** JONATHAN COHEN/BINGHAMTON UNIVERSITY

**Copyright Info URL:** www.binghamton.edu

**Created:** 10/4/2009 – 10:17 AM

**Application:** Adobe Photoshop CS3 Macintosh

**Modified:** 10/4/2009 – 10:17 AM

**Format:** image/tiff
Overview of the Libraries’ Workflow

**Initial Set-up**

**Metadata Librarian**
- Evaluate embedded metadata; determine DC mappings & fields to be added
- Create metadata form and DC mapping table in the preservation system; create keyword & creator mapping tables
- Identify new keywords to be mapped; update keyword mapping table
- Run scripts, output DC metadata as CSV file

**Director of Library Technology**
- Write shell scripts to transform & map embedded metadata
- Write shell scripts to extract keywords & other metadata created by photographer
- Review & approve metadata
- Ingest CSV and photo files; publish to discovery layer
Overview of the Libraries’ Workflow

Subsequent Loads

Metadata Librarian

Receive photographs

Metadata Librarian

Extract keywords

Identify new keywords to be mapped; update keyword mapping table

Run scripts, output DC metadata as CSV file

Ingest CSV and photo files, publish to discovery layer

Director of Library Technology

Review & approve metadata
Extracting, Evaluating and Transforming Metadata
## Extracting, Evaluating and Transforming Metadata

<table>
<thead>
<tr>
<th>XMP Metadata Fields</th>
<th>Map To Dublin Core Field</th>
<th>Default Value(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dc:title</td>
<td>dc:title</td>
<td>Homecoming 2009</td>
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<tr>
<td>dcterms:isPartOf</td>
<td>dcterms:isPartOf</td>
<td>Binghamton University Photographs</td>
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<tr>
<td>Binghamton University 2009 Homecoming Photos</td>
<td>dcterms:isPartOf</td>
<td>State University of New York at Binghamton</td>
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<tr>
<td>State University of New York at Binghamton</td>
<td>dcterms:rightsHolder</td>
<td>State University of New York at Binghamton</td>
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<tr>
<td>dcterms:license</td>
<td>dcterms:license</td>
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<td>dcterms:type</td>
<td>dcterms:type</td>
<td>Image</td>
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<tr>
<td>dcterms:modified</td>
<td>dcterms:modified</td>
<td>*Enter YYYY-MM-DD for date the photos are ingested.</td>
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<tr>
<td>XMP-dc:Format</td>
<td>dcterms:medium</td>
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<tr>
<td>XMP-dc:Creator</td>
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<td>XMP-dc:Creator</td>
<td>dc:rightsHolder</td>
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<tr>
<td>XMP-Photoshop:DateCreated</td>
<td>dcterms:created</td>
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<td>XMP-dc:Description</td>
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Keywords ➔ Subject Headings

- homecoming 2009: 161
- on campus: 152
- events: 152
- homecoming: 146
- alumni: 101
- events center: 52
- ec: 52
- fine arts building: 39
- fa: 39
- memorial: 35
- students: 29
- wine: 28
- party: 28
- cheese: 28
Keywords ➔ Subject Headings

events > homecoming 2009
   161 2009
   152 on campus
   152 events
   146 homecoming
   101 alumni
   52 events center
   52 ec
   39 fine arts building
   39 fa
   35 memorial
   29 students
   28 wine
   28 party
   20 cheese
Keywords → Subject Headings

- events\textgreater;homecoming 2009
- 161 2009
- 152 on campus
- 152 events
- 146 homecoming
- 101 alumni
  - 52 events center
  - 52 ec
  - 39 fine arts building
  - 39 fa
  - 35 memorial
  - 29 students
- 28 wine
- 28 party
- 20 cheese

Events (dcterms:TGM)

Class reunions--New York (State)--Binghamton (dcterms:LCSH)

State University of New York at Binghamton--Alumni and alumnae (dcterms:LCSH)

Events Center (dcterms:spatial)

Fine Arts Building (dcterms:spatial)

Fine Arts Building. Memorial Courtyard (dcterms:spatial)

State University of New York at Binghamton--Buildings (dcterms:LCSH)

State University of New York at Binghamton--Students (dcterms:LCSH)
Keywords ➔ Subject Headings

- Events (dcterms:TGM)
- Class reunions--New York (State)--Binghamton (dcterms:LCSH)
- State University of New York at Binghamton--Alumni and alumnae (dcterms:LCSH)
- Events Center (dcterms:spatial)
- Fine Arts Building (dcterms:spatial)
- Fine Arts Building. Memorial Courtyard (dcterms:spatial)
- State University of New York at Binghamton--Buildings (dcterms:LCSH)
- State University of New York at Binghamton--Students (dcterms:LCSH)
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<th>TGM <a href="">dc:subject@xsi:type=&quot;dcterms:TGM&quot;</a></th>
<th>Coverage Spatial <a href="">dcterms:spatial</a></th>
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<td>College in the Woods</td>
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<td>Commencement ceremonies--New York (State)--Binghamton</td>
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<td>Commencement ceremonies--New York (State)--Binghamton</td>
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<td>Council for Higher Education Accreditation (U.S.)</td>
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<tr>
<td>couper administration building</td>
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<tr>
<td>courtyard</td>
<td>Fine Arts Building. Memorial Courtyard</td>
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</table>
# Extract all appropriate Metadata for all files and write to $TEMPFILE
exiftool -T -filename -FileType -Format -DateCreated –ImageSize /
-XMP-dc:Creator -XMP-dc:Description -XMP-dc:Subject /
$IMAGES >> $TEMPDIR"/"$TEMPFILE
## Making a Deposit

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
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<td>Binghamton University 2009 Homecoming</td>
<td>State University of New York</td>
<td><a href="http://library.binghamton.edu">http://library.binghamton.edu</a></td>
<td>Image</td>
<td>20091002_summerimageiff</td>
<td>2009-10-02</td>
<td>2013-06-24</td>
<td>Award winners, Pi</td>
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</tbody>
</table>
Making a Deposit

CSV + images files ➔ preservation system
Metadata Display

Homecoming 2009
**Title:** Homecoming 2009  
**Creator:** Cohen, Jonathan  
**Publisher:** State University of New York at Binghamton  
**Subject (TGM):** Spectators  
**Subject (TGM):** Fans (Persons)  
**Subject (TGM):** Events  
**Subject (LCSH):** Class reunions--New York (State)--Binghamton  
**Subject (LCSH):** Sports teams--New York (State)--Binghamton  
**Subject (LCSH):** Cheerleading--New York (State)--Binghamton  
**Subject (LCSH):** State University of New York at Binghamton--Soccer  
**Subject (LCSH):** State University of New York at Binghamton--Sports  
**Subject (LCSH):** State University of New York at Binghamton--Varsity  
**Subject (LCSH):** State University of New York at Binghamton--Department of Athletics--Bears  
**Subject (LCSH):** State University of New York at Binghamton--Pictorial  
**Subject (LCSH):** Universities and colleges--New York (State)--Binghamton  
**Subject (LCSH):** State University of New York at Binghamton--Student Life  
**Subject:** 2009  
**Subject:** celebrate  
**Subject:** athletics  
**Subject:** on campus  
**Subject:** scream  
**Subject:** soccer  

**Description:** The Binghamton University student section cheers for the Men's Soccer team during a game with the University of Rhode Island, Saturday night, October 3, 2009. The game ended in a 1-1 tie.

**Location:** On-campus  
**Digital Format:** image/tiff  
**Material Type:** Image  
**Date Digital:** 2013-06-24  
**Identifier:** 20091003_homecoming010_jwc.tiff  
**Collection:** Binghamton University 2009 Homecoming Photos  
**Collection:** Binghamton University Photographs  
**Date Created:** 2009-10-03  
**License:** http://library.binghamton.edu/technology/policies/university_photographs.html  
**Rights Holder:** Cohen, Jonathan ; State University of New York at Binghamton
Questions?

• **Contact:** rjaffe@binghamton.edu
ecorrado@binghamton.edu

• **Special thanks to:**

  Jonathan Cohen  
  University Photographer  
  Binghamton University