

STRATEGIES AND TOOLS FOR TRANSFORMING UNSTRUCTURED METADATA INTO STRUCTURED LINKED DATA

PRESENTER: [HTTP://ID.LOC.GOV/AUTHORITIES/NAMES/N2019070037](http://id.loc.gov/authorities/names/n2019070037)

POSITION: SPECIAL COLLECTIONS AND ARCHIVES METADATA LIBRARIAN & ASSISTANT PROFESSOR

AFFILIATION: [HTTP://ID.LOC.GOV/AUTHORITIES/NAMES/N02008159200](http://id.loc.gov/authorities/names/n02008159200)



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BRIEF HISTORY OF EARLY DIGITAL COLLECTIONS



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DIGITAL COLLECTIONS DEPARTMENT

- **3 FACULTY**
- **1 VISITING FACULTY**
- **1 LIBRARY TECHNICIAN III**
- **1 LIBRARY TECHNICIAN II**
- **2 CONTRACT EMPLOYEES**
- **4 STUDENT WORKERS**



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DIGITIZATION ACTIVITIES IN 2019

- **UNION PACIFIC RAILROAD PROJECT: 60,000 DIGITAL RESOURCES**
- **GRADUATE STUDENT PROJECT: 2,008 DIGITAL RESOURCES**
- **PHOTO COLLECTIONS: 8,000 DIGITAL RESOURCES**
- **SCAN ON DEMAND: 850 DIGITAL RESOURCES**
- **OUTSOURCED NEWSPAPER PROJECT: 72,000 PAGES**



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DIGITIZATION ACTIVITIES IN 2019

Before 2006

- Small digital collections
- Very little metadata
- Metadata copied from MARC

2009

- Thesaurus for Graphic Materials (TGM) adopted

2012

- Adjust metadata to allow faceting

2017

- EZID used to mint URIs for local names

2019

- Mountain West Digital Library: MAP v3
- Digital Collections: MAP v3.1.0

2006

- Dublin Core adopted

2011

- Faceted Application of Subject Terminology (FAST) adopted
- Mountain West Digital Library: MAP v2
- Local MAP aligned to MWDL MAP

2013

- Preliminary linked data experimentations in Digital Collections

2018

- Digital Collections: MAP v3.0 incorporated into production
- Geonames URIs added to metadata

2020

- Migration of resources from CONTENTdm to Islandora 8
- Use of Islandora 8 as a substitute for the ArchiveSpace public user interface



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METADATA APPLICATION PROFILES



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NAMESPACES USED IN MAP

- **DUBLIN CORE**
- **PREMIS**
- **SCHEMA.ORG**



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METADATA MAPPINGS IN CONTENTDM

1	Digital ID	None	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
2	Title	Title	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
3	Individual Creator	Creator	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
4	Group Creator	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
5	Description	Description	Text	Yes	Yes	No	No	No	move to ▼	edit	delete
6	Identified Individuals	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
7	Identified Groups	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
8	Individual Contributors	Contributors	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
9	Group Contributors	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
10	Collection #	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
11	Image #	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
12	Source	Source	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
13	Original Collection	Source	Text	No	Yes	No	Yes	Yes-shared	move to ▼	edit	delete
14	Original Date	Date-Created	Date	No	Yes	No	Yes	No	move to ▼	edit	delete
15	Alternative Date	None	Text	No	No	No	No	No	move to ▼	edit	delete
16	Subject (FAST Topical)	Subject	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
17	Individual as Subject	Subject	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
18	Group as Subject	Subject	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
19	Spatial Coverage (TGN)	Coverage-Spatial	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
20	Spatial Coverage (Geonames)	Coverage-Spatial	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
21	Site Name	None	Text	No	No	No	No	Yes-shared	move to ▼	edit	delete
22	Address1 (#, street)	None	Text	No	No	No	No	No	move to ▼	edit	delete
23	Address2 (TGN)	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
24	Graphic Elements (TGM)	Subject	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
25	DC Type	Type	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
26	Genre (TGM)	None	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
27	Specific Genre	None	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
28	Language	Language	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
29	Relation	Relation	Text	No	Yes	No	No	No	move to ▼	edit	delete
30	Rights	Rights	Text	No	No	No	No	No	move to ▼	edit	delete
31	Digital Publisher	Publisher	Text	No	Yes	No	No	No	move to ▼	edit	delete
32	Digital Collection	None	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
33	Conversion Specifications	None	Text	No	Yes	Yes	No	No	move to ▼	edit	delete
34	Cataloger's Notes	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
35	Compound Objects	None	Text	No	Yes	Yes	No	No	move to ▼	edit	delete
36	Favorite Image	None	Text	No	Yes	Yes	No	No	move to ▼	edit	delete
37	Master File Creation Date	None	Date	No	Yes	Yes	No	No	move to ▼	edit	delete
38	Master File Creation Equipment	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
39	Master Extent	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
40	Master File Format	None	Text	No	Yes	Yes	No	Yes	move to ▼	edit	delete
41	Master Operating System	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
42	Master File Quality	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
43	Master File Creation Software	None	Text	No	No	Yes	No	No	move to ▼	edit	delete
44	Scanner	None	Text	No	No	Yes	No	No	move to ▼	edit	delete

1	Object Archival Resource Key	Identifier	Text	No	No	No	No	No	move to ▼	edit	delete
2	Digital Identifier	Identifier	Text	No	No	No	Yes	No	move to ▼	edit	delete
3	Physical Identifier	Identifier	Text	No	No	No	Yes	No	move to ▼	edit	delete
4	Citation	Identifier-Bibliographic Citation	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
5	Related Materials	Relation	Text	No	No	No	No	No	move to ▼	edit	delete
6	Collection Guide	Relation-Is Referenced By	Text	No	No	No	Yes	Yes	move to ▼	edit	delete
7	Collection	Source	Text	No	Yes	No	Yes	Yes	move to ▼	edit	delete
8	Series	Relation-Is Part Of	Text	No	Yes	No	No	No	move to ▼	edit	delete
9	Project Name	None	Text	No	No	No	No	No	move to ▼	edit	delete
10	Title	Title	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
11	Alternative Title	Title-Alternative	Text	No	Yes	No	No	No	move to ▼	edit	delete
12	Description	Description	Text	Yes	Yes	No	No	No	move to ▼	edit	delete
13	Date	Date	Text	No	Yes	No	No	No	move to ▼	edit	delete
14	Time Period	Coverage-Temporal	Text	No	Yes	No	No	No	move to ▼	edit	delete
15	Creator	Creator	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
16	Contributors	Contributors	Text	No	Yes	No	No	Yes-shared	move to ▼	edit	delete
17	Subject	Subject	Text	No	Yes	No	Yes	Yes	move to ▼	edit	delete
18	Extent	Format-Extent	Text	No	Yes	No	No	No	move to ▼	edit	delete
19	Format	Format	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
20	Resource Type	Type	Text	No	Yes	No	Yes	Yes	move to ▼	edit	delete
21	Original Format	Relation-Is Format Of	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
22	Language	Language	Text	No	Yes	No	No	Yes	move to ▼	edit	delete
23	Place Name	Coverage-Spatial	Text	No	No	No	No	Yes	move to ▼	edit	delete
24	Geographic Map	Coverage-Spatial	Text	No	No	No	No	Yes	move to ▼	edit	delete
25	Geographic Coordinate	Coverage-Spatial	Text	No	No	No	No	Yes	move to ▼	edit	delete
26	Publisher	Publisher	Text	No	No	No	Yes	Yes	move to ▼	edit	delete
27	Rights	Rights	Text	No	Yes	No	Yes	No	move to ▼	edit	delete
28	Standardize Rights Statement	Rights	Text	No	No	No	Yes	Yes	move to ▼	edit	delete
29	Rights Holder	Rights-Rights Holder	Text	No	Yes	No	No	No	move to ▼	edit	delete
30	Staff Note	None	Text	No	Yes	Yes	No	No	move to ▼	edit	delete
31	Provenance	Provenance	Text	No	Yes	No	No	No	move to ▼	edit	delete
32	Conversion Specifications	None	Text	No	No	Yes	No	Yes	move to ▼	edit	delete
33	Date Created	Date-Created	Date	No	Yes	No	Yes	No	move to ▼	edit	delete



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ONTOLOGIES AND CONTROLLED VOCABULARIES



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ONTOLOGIES USED

- **AGENT RELATIONSHIP ONTOLOGY (AGRELON)**
- **SIMPLE KNOWLEDGE ORGANIZATION SYSTEM (SKOS)**
- **DBPEDIA ONTOLOGY**



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SKOS: CONNECTING ENTITIES TO URI

Link type editor

Link type label:	Link type alias	
		Submit
broadMatch	broadMatch	1
closeMatch	closeMatch	669
exactMatch	exactMatch	2034
narrowMatch	narrowMatch	Delete link type
relatedMatch	relatedMatch	Delete link type
5		

0-9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Œ ' 楊

[SPARQL endpoint](#) [API](#) [RSS](#) [Show recent changes](#)

english ▼



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MAPPING RELATIONSHIPS AMONG ENTITIES

Relations editor

Relation type	Relation sub-type label:	Relation sub-type alias	Orden	
BT/NT ▼				Submit
RT	agrelon:hasStepSibling	SS	0	2
RT	agrelon:HasOffspringAncestor	OA	0	2
RT	agrelon:hasSpouse	SP	1	547
RT	agrelon:hasParent	hP	2	383
RT	agrelon:hasChild	PO	3	257
RT	agrelon:hasSibling	SI	4	403
RT	agrelon:hasEmployee	EO	5	207
RT	agrelon:hasEmployer	EB	6	217
RT	agrelon:hasFriend	hF	7	22
RT	agrelon:hasCollaborator	CW	8	2
RT	agrelon:hasColleague	CG	9	45
RT	agrelon:hasAcquaintance	AQ	15	26
RT	agrelon:hasGrandParent	GC	16	79



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MANAGEMENT OF NAME ENTITIES AND RELATIONSHIPS IN TEMATRES CONTROLLED VOCABULARY SERVER



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TEMATRES: GRAPHIC USER INTERFACE

UNLV Person & Group Authority Data

[Home](#)[Menu ▾](#)[Add Term](#)[Advanced search](#)[About...](#)[👤 Damelle Melvin](#)

0-9	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Æ	'	楊
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

► <COLLECTION>

► <GROUP>

► <PERSON>



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TEMATRES GROUP

<GROUP>

Is a meta-term.

[Home](#) / [GROUP](#)

[Term](#)

[Options](#) ▾

[Add](#) ▾

[Metadata](#)

GROUP

[code]

More specific terms

- ✕ NT1 [code] <Authority Group Name> ▶
- ✕ NT1 [code] <Local Group Name> ▶



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TEMATRES: PERSON

<PERSON>

Is a meta-term.

[Home](#) / [PERSON](#)

[Term](#) [Options▼](#) [Add▼](#) [Metadata](#)

PERSON

[code]

More specific terms

- ✖ NT1 [code] <Authority Person Name> ▶
- ✖ NT1 [code] <Local Person Name> ▶



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TEMATRES: NOTE TYPES

Configure types notes

Note type	Alias:	Orden	
			Submit
Original Material ID	OMI	1	2713 notes
Resource note	RS	1	2279 notes
Alternative Names	AL	2	281 notes
Bio note/Coll description	BN	2	2335 notes
Finding Aid (only for Collections)	FA	2	219 notes
Relationship note	RN	2	419 notes
Standard vocabulary note	SV	2	13 notes
URI	URI	2	933 notes
Nota catalográfica	NC	3	641 notes
Private note	NP	5	200 notes
Link to JHP	JHP	6	186 notes
Scope note	NA	10	0 notes
Bibliographic note	NB	10	26 notes
Historic note	NH	10	7 notes
14			



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TEMATRES: EXAMPLE RECORD 1

Manor, Jessie Pearl Howard Johnson, 1892-1969

[Home](#) / [PERSON](#) / [Local Person Name](#) / Manor, Jessie Pearl Howard Johnson, 1892-1969

Term Notes (5) Options Add Metadata

[Manor, Jessie Pearl Howard Johnson, 1892-1969](#)
[code]

Non preferred terms

✖ [UF](#) [Jessie Johnson Manor](#)

Broader Terms

✖ [BT](#) [<Local Person Name>](#)

Related terms

- ✖ [RTSP](#) [Johnson, Clarence L., 1910-1990](#)
- ✖ [RThP](#) [Baxter, Josephine, -1939](#)
- ✖ [RThP](#) [Howard, Marcus Ford, 1850-1908](#)
- ✖ [RTPO](#) [Johnson, Josephine Gail](#)
- ✖ [RTPO](#) [Manor, Sam Houston, Jr.](#)
- ✖ [RTSI](#) [Howard Copley, Nancy](#)
- ✖ [RTSI](#) [Howard Moxley, Allie](#)
- ✖ [RTSI](#) [Howard, Houston](#)
- ✖ [RTSI](#) [Howard, James Hayden](#)
- ✖ [RTSI](#) [Howard, Lyte](#)
- ✖ [RTSI](#) [Howard, Minnie](#)
- ✖ [RTSI](#) [Howard, William](#)
- ✖ [RTSI](#) [Lohr, Ollie Masters](#)
- ✖ [RTGO](#) [Roark, Ruth](#)



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TEMATRES: EXAMPLE RECORD 1: NOTES

Manor, Jessie Pearl Howard Johnson, 1892-1969

[Home](#) / [PERSON](#) / [Local Person Name](#) / Manor, Jessie Pearl Howard Johnson, 1892-1969

[Term](#) [Notes \(5\)](#) [Options ▾](#) [Add ▾](#) [Metadata](#)

Original Material ID (en-US) [Edit note](#) [Delete note](#)

This term (and those akin to it) can be found in the following images: pho020069, pho020071, pho020074, pho020075, and pho020076.

2016-04-29 11:35:30

Resource note (en-US) [Edit note](#) [Delete note](#)

Information for this person was found through various descriptions included with the images she was depicted in and through this link associated with Ancestry.com: <http://freepages.history.rootsweb.ancestry.com/~ourdavispioneerances/JosieBaxterHoward.htm>

2016-04-29 11:36:36

Alternative Names (en-US) [Edit note](#) [Delete note](#)



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TEMATRES: EXAMPLE RECORD 2

Denver post

[Home](#) / [GROUP](#) / [Authority Group Name](#) / [Denver post](#)

[Term](#) [Notes \(5\)](#) [Options▼](#) [Add▼](#) [Metadata](#)

[Denver post](#)
[\[code\]](#)

Non preferred terms

✖ [UF](#) [The Denver Post](#)

Broader Terms

✖ [BT](#) [<Authority Group Name>](#)

Related terms

✖ [RTDS](#) <http://dbpedia.org/resource/Publication>

✖ CloseMatch http://dbpedia.org/resource/The_Denver_Post

✖ CloseMatch <http://id.loc.gov/authorities/names/n81078265>



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TEMATRES: EXAMPLE RECORD 2: NOTES

Denver post

[Home](#) / [GROUP](#) / [Authority Group Name](#) / [Denver post](#)

[Term](#) [Notes \(5\)](#) [Options ▾](#) [Add ▾](#) [Metadata](#)

Original Material ID (en-US) [Edit note](#) [Delete note](#)

ent001490

2018-05-21 12:36:29

Resource note (en-US) [Edit note](#) [Delete note](#)

Wiki Page: [link](#)

Official website: [link](#)

2018-05-21 12:42:45

Alternative Names (en-US) [Edit note](#) [Delete note](#)

Also known as The Denver Post.

2018-05-21 12:42:02



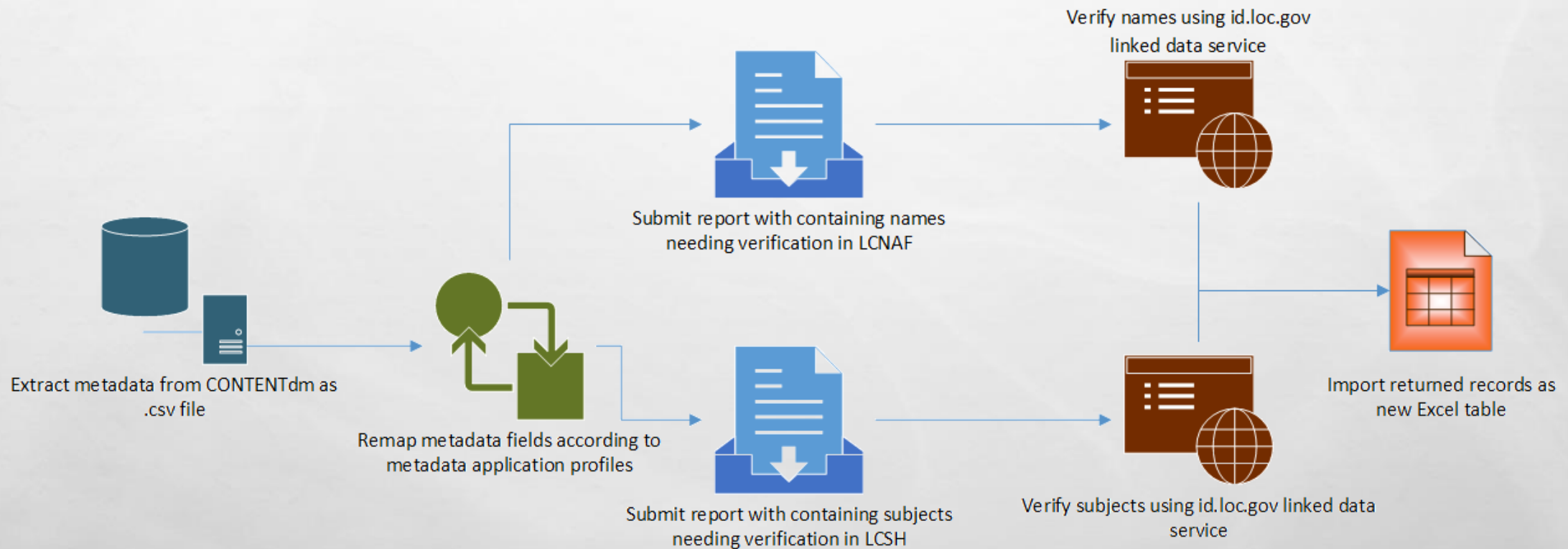
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EXTRACT, TRANSFORM, LOAD (E.T.L.) WORKFLOW



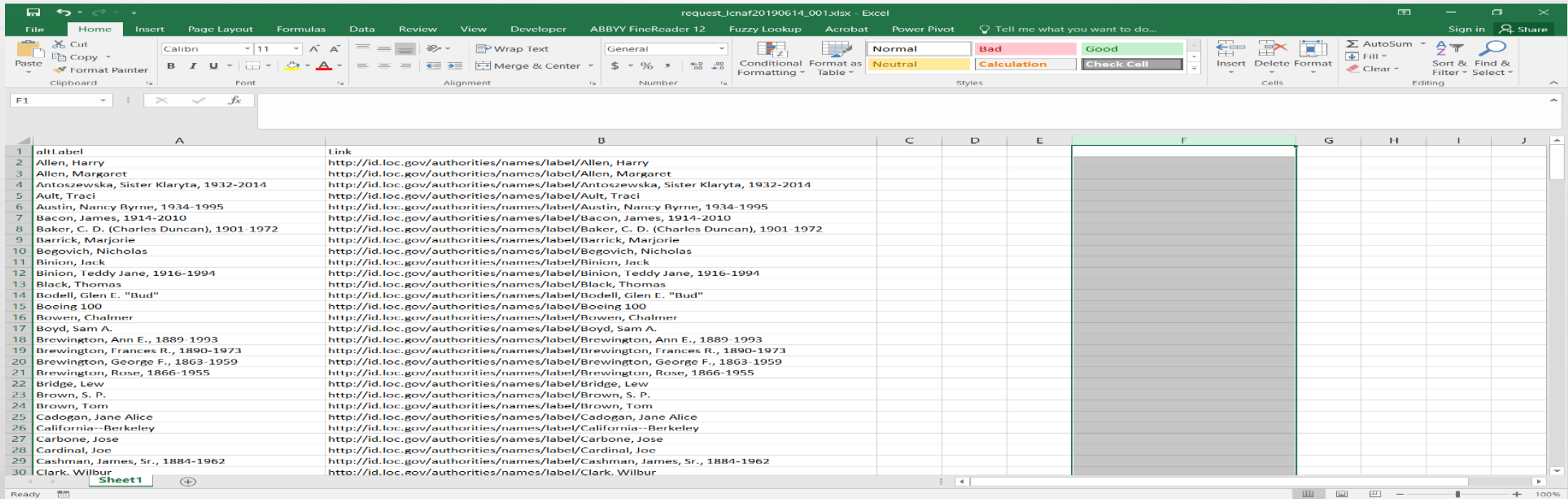
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E.T.L. FOR METADATA REMEDIATION



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REQUESTING ENTITIES FROM LOC LINKED DATA SERVICE



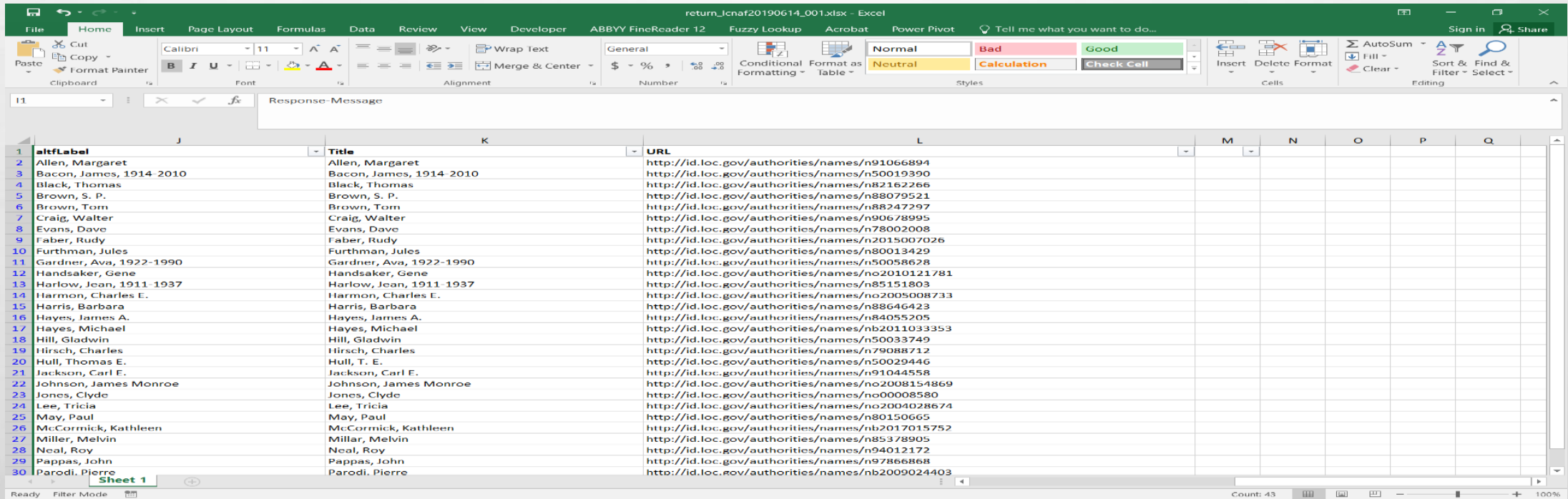
The screenshot shows an Excel spreadsheet with two columns: 'Label' and 'Link'. The 'Label' column contains various entity names, and the 'Link' column contains the corresponding LOC Linked Data Service URLs. The spreadsheet is titled 'request_1cnaf20190614_001.xlsx'.

Label	Link
Allen, Harry	http://id.loc.gov/authorities/names/label/Allen, Harry
Allen, Margaret	http://id.loc.gov/authorities/names/label/Allen, Margaret
Antoszevska, Sister Klaryta, 1932-2014	http://id.loc.gov/authorities/names/label/Antoszevska, Sister Klaryta, 1932-2014
Ault, Traci	http://id.loc.gov/authorities/names/label/Ault, Traci
Austin, Nancy Byrne, 1934-1995	http://id.loc.gov/authorities/names/label/Austin, Nancy Byrne, 1934-1995
Bacon, James, 1914-2010	http://id.loc.gov/authorities/names/label/Bacon, James, 1914-2010
Baker, C. D. (Charles Duncan), 1901-1972	http://id.loc.gov/authorities/names/label/Baker, C. D. (Charles Duncan), 1901-1972
Barrick, Marjorie	http://id.loc.gov/authorities/names/label/Barrick, Marjorie
Begovich, Nicholas	http://id.loc.gov/authorities/names/label/Begovich, Nicholas
Binion, Jack	http://id.loc.gov/authorities/names/label/Binion, Jack
Binion, Teddy Jane, 1916-1994	http://id.loc.gov/authorities/names/label/Binion, Teddy Jane, 1916-1994
Black, Thomas	http://id.loc.gov/authorities/names/label/Black, Thomas
Bodell, Glen E. "Bud"	<a bud"="" href="http://id.loc.gov/authorities/names/label/Bodell, Glen E. ">http://id.loc.gov/authorities/names/label/Bodell, Glen E. "Bud"
Boeing 100	http://id.loc.gov/authorities/names/label/Boeing 100
Bowen, Chalmer	http://id.loc.gov/authorities/names/label/Bowen, Chalmer
Boyd, Sam A.	http://id.loc.gov/authorities/names/label/Boyd, Sam A.
Brewington, Ann E., 1889-1993	http://id.loc.gov/authorities/names/label/Brewington, Ann E., 1889-1993
Brewington, Frances R., 1890-1973	http://id.loc.gov/authorities/names/label/Brewington, Frances R., 1890-1973
Brewington, George F., 1863-1959	http://id.loc.gov/authorities/names/label/Brewington, George F., 1863-1959
Brewington, Rose, 1866-1955	http://id.loc.gov/authorities/names/label/Brewington, Rose, 1866-1955
Bridge, Lew	http://id.loc.gov/authorities/names/label/Bridge, Lew
Brown, S. P.	http://id.loc.gov/authorities/names/label/Brown, S. P.
Brown, Tom	http://id.loc.gov/authorities/names/label/Brown, Tom
Cadogan, Jane Alice	http://id.loc.gov/authorities/names/label/Cadogan, Jane Alice
California--Berkeley	http://id.loc.gov/authorities/names/label/California--Berkeley
Carbone, Jose	http://id.loc.gov/authorities/names/label/Carbone, Jose
Cardinal, Joe	http://id.loc.gov/authorities/names/label/Cardinal, Joe
Cashman, James, Sr., 1884-1962	http://id.loc.gov/authorities/names/label/Cashman, James, Sr., 1884-1962
Clark, Wilbur	http://id.loc.gov/authorities/names/label/Clark, Wilbur



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RETURNED ENTITIES FROM LOC LINKED DATA SERVICE



altLabel	Title	URL
Allen, Margaret	Allen, Margaret	http://id.loc.gov/authorities/names/n91066894
Bacon, James, 1914-2010	Bacon, James, 1914-2010	http://id.loc.gov/authorities/names/n50019390
Black, Thomas	Black, Thomas	http://id.loc.gov/authorities/names/n82162266
Brown, S. P.	Brown, S. P.	http://id.loc.gov/authorities/names/n88079521
Brown, Tom	Brown, Tom	http://id.loc.gov/authorities/names/n88247297
Craig, Walter	Craig, Walter	http://id.loc.gov/authorities/names/n90678995
Evans, Dave	Evans, Dave	http://id.loc.gov/authorities/names/n78002008
Faber, Rudy	Faber, Rudy	http://id.loc.gov/authorities/names/n2015007026
Furthman, Jules	Furthman, Jules	http://id.loc.gov/authorities/names/n80013429
Gardner, Ava, 1922-1990	Gardner, Ava, 1922-1990	http://id.loc.gov/authorities/names/n50058628
Handsaker, Gene	Handsaker, Gene	http://id.loc.gov/authorities/names/no2010121781
Harlow, Jean, 1911-1937	Harlow, Jean, 1911-1937	http://id.loc.gov/authorities/names/n85151803
Harmon, Charles E.	Harmon, Charles E.	http://id.loc.gov/authorities/names/no2005008733
Harris, Barbara	Harris, Barbara	http://id.loc.gov/authorities/names/n88646423
Hayes, James A.	Hayes, James A.	http://id.loc.gov/authorities/names/n84055205
Hayes, Michael	Hayes, Michael	http://id.loc.gov/authorities/names/nb2011033353
Hill, Gladwin	Hill, Gladwin	http://id.loc.gov/authorities/names/n50033749
Hirsch, Charles	Hirsch, Charles	http://id.loc.gov/authorities/names/n79088712
Hull, Thomas E.	Hull, T. E.	http://id.loc.gov/authorities/names/n50029446
Jackson, Carl E.	Jackson, Carl E.	http://id.loc.gov/authorities/names/n91044558
Johnson, James Monroe	Johnson, James Monroe	http://id.loc.gov/authorities/names/no2008154869
Jones, Clyde	Jones, Clyde	http://id.loc.gov/authorities/names/no0008580
Lee, Tricia	Lee, Tricia	http://id.loc.gov/authorities/names/no2004028674
May, Paul	May, Paul	http://id.loc.gov/authorities/names/n80150665
McCormick, Kathleen	McCormick, Kathleen	http://id.loc.gov/authorities/names/nb2017015752
Miller, Melvin	Millar, Melvin	http://id.loc.gov/authorities/names/n85378905
Neal, Roy	Neal, Roy	http://id.loc.gov/authorities/names/n94012172
Pappas, John	Pappas, John	http://id.loc.gov/authorities/names/n97866868
Parodi, Pierre	Parodi, Pierre	http://id.loc.gov/authorities/names/nb2009024403



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REQUESTING ENTITIES FROM GEONAMES SEMANTIC WEB SERVICE

GET RECORD

- **[HTTP://API.GEONAMES.ORG/GET?GEONAMEID=5323669&USERNAME=USERNAMEHERE](http://api.geonames.org/get?geonameid=5323669&username=usernamehere)**



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REQUESTING ENTITIES FROM GEONAMES SEMANTIC WEB SERVICE

GET CHILDREN

- **[HTTP://API.GEONAMES.ORG/CHILDREN?GEONAMEID=5499105&USERNAME=USERNAMEHERE](http://api.geonames.org/children?geonameid=5499105&username=usernamehere)**



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REQUESTING ENTITIES FROM GEONAMES SEMANTIC WEB SERVICE

GET HIERARCHY

- **[HTTP://API.GEONAMES.ORG/HIERARCHY?GEONAMEID=5323669&USERNAME=USERNAMEHERE](http://api.geonames.org/hierarchy?geonameid=5323669&username=usernamehere)**



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TRANSFORMATION TOOLS



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STRATEGIES: FROM METADATA TO LINKED DATA



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STRATEGIES

- **FROM STRING TO THINGS**
- **UNLOCK STATEMENTS IN NOTES AND ENCODE IT**
- **CONNECT ENTITIES TO OTHER THINGS**
- **RE-USE URIS**



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