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# Changing the Landscape: Integrating Art Museum Content in University of Utah's USEARCH

ALL U  
NEED

 **J. Willard Marriott Library**  
THE UNIVERSITY OF UTAH

**UMFA**  
UTAH MUSEUM OF  
FINE ARTS

IGeLU Developers' Day & Full Conference  
September 12-13, 2022

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# Presenters

- Jessica Breiman, Special Collections  
Digital Archives Librarian
- Teresa Hebron, Digital Metadata Librarian
- Tracy Medley, Head of Enterprise Systems  
& Software Development
- Bohan Zhu, Web Software Developer



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# Landscape, Land Art, and the American West: A Joint Research & Scholarly Engagement Initiative

**Library -  
Museum Data  
Integration**

**Research into  
the Museum  
and Library  
Collections**

**Faculty  
Research  
Grants/  
Programs and  
Exhibitions**

**2018-2022**



# Discovery Tool Subcommittee & Grant Goals

**Charge:** Produce a tool that integrates museum and library collections

**Members:** library faculty, associate deans, and enterprise systems & software development staff, UMFA curators, digital projects and collections management staff

**Tasks:** Metadata mapping and remediation; harvesting data from Argus into Primo and customizing normalization and discovery display





## Initial Primo Set-up

- **Created Sandbox UMFA view**
- **Consulted with other institutions**
- **Started from existing Digital Collections normalization template**  
Copied and customized our existing Digital Collections rules to accommodate UMFA materials
- **Scoped a subset of Marriott Digital Collections materials to test alongside UMFA materials**  
To test compatibility of side-by-side searching and identify conflicting display needs



# Harvesting the Data

Ingesting data from ARGUS proved challenging

- **No OAI feed**  
ARGUS did not provide OAI-PMH harvest
- **FTP harvest unsuccessful**  
Several unsuccessful attempts to harvest via FTP
- **XML file & the transformation script to the rescue**

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# Argus Data Handling Script

## Public Repository:

<https://gitlab.lib.utah.edu/mellon-grant-projects-public/mellon-grant-umfa-public/-/tree/master>

## Prerequisites:

PHP 5.5+


Extension “xsl” enabled in php.ini


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# Conversion Lifecycle

## Input:

 UMFA-Records\_Remediated.xml

 All\_Public\_Image\_Keys\_20210708.csv

## Run Script:

 UMFA-Records\_Remediated\_converted.xml

## Compress:

(Ready for Harvest)

 UMFA-Records\_Remediated\_converted.rar

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```
<?xml version="1.0" encoding="utf-8"?>
<sydney>
  <import>
    <template id="Object">
      <record>
        <field id="SystemKey"><![CDATA[1f6058c8-04a1-4e12-9b64-acba10c4d3cb]]></field>
        <field id="DtTmCreated"><![CDATA[2014/02/19 13:51:51]]></field>
        <field id="DtTmModifd"><![CDATA[2021/11/02 10:13:53]]></field>
        <link id="UserModifd" linkfield="~Name"><![CDATA[Breiman]]></link>
        <field id="ObjectID"><![CDATA[UMFA1975.001.004.001]]></field>
        <field id="Synopsis"><![CDATA[Franz Brasz | American | Untitled]]></field>
        <link id="Collection" linkfield="Code"><![CDATA[]]></link>
        <link id="Department" linkfield="Code"><![CDATA[]]></link>
        <link id="Flags" linkfield="Code"><![CDATA[]]></link>
        <link id="Flags" linkfield="Code"><![CDATA[]]></link>
        <field id="Count"><![CDATA[1]]></field>
        <template id="LocationD" linkfield="Location1">
          <record>
            <field id="SystemKey"><![CDATA[179d9131-caa2-4cc3-847e-0e33ce8f30be]]></field>
            <field id="DtTmCreated"><![CDATA[2014/02/19 13:52:24]]></field>
            <field id="DtTmModifd"><![CDATA[2014/02/19 13:52:24]]></field>
            <field id="LocationID"><![CDATA[Art Storage 2.freestanding]]></field>
            <link id="LocationTy" linkfield="Code"><![CDATA[Inventory]]></link>
            <link id="DoneBy" linkfield="Initials"><![CDATA[MVF]]></link>
            <field id="LocnDt"><![CDATA[08/15/2008]]></field>
            <field id="LocnDts"><![CDATA[2454693.50000000]]></field>
            <field id="LocnDte"><![CDATA[2454693.50000000]]></field>
            <field id="Notes"><![CDATA[move holding in crates on floor of A2]]></field>
            <field id="OldKey"><![CDATA[379332]]></field>
            <field id="#CurLocLink_Marker"><![CDATA[False]]></field>
            <field id="#PerLocLink_Marker"><![CDATA[False]]></field>
          </record>
        </template>
        <template id="LocationD" linkfield="Location1">
          <record>
            <field id="SystemKey"><![CDATA[d9a050a7-9f8c-49cf-aec1-164b51efb9a8]]></field>
            <field id="DtTmCreated"><![CDATA[2014/02/19 13:52:24]]></field>
```

```
▼ <OAI-PMH xmlns="http://www.openarchives.org/OAI/2.0/" xmlns:xsi="http://www.w3.org/2003/05/20/xmlschema-1"
  xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/ http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2019-07-10T16:38:10Z</responseDate>
  <request verb="ListRecords" metadataPrefix="oai_qdc" set="argus">http://uvu.cu.edu.au/oclc/argus/1/
  ▼ <ListRecords>
    ▼ <record>
      ▼ <header>
        <identifier>oai:uvu.contentdm.oclc.org:argus/1</identifier>
        <datestamp>2018-06-03</datestamp>
        <setSpec>argus</setSpec>
      </header>
      ▼ <metadata>
        ▼ <oai_qdc:qualifieddc xmlns:oai_qdc="http://worldcat.org/xmlschemas/qdc-1.0/" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:xsi="http://www.w3.org/2003/05/20/xmlschema-1"
          xsi:schemaLocation="http://worldcat.org/xmlschemas/qdc-1.0/ http://worldcat.org/xmlschemas/qdc-1.0/qdc-1.0.xsd">
          <dc:title>Untitled</dc:title>
          <dc:creator>Brasz, Franz</dc:creator>
          <dc:description/>
          <dc:date>1932</dc:date>
          <dc:publisher/>
          <dc:type/>
          <dc:format/>
          <dc:rights/>
          <dc:identifier>UMFA1975.001.004.001</dc:identifier>
          <dcterms:medium>paper</dcterms:medium>
          <dcterms:medium>watercolor (paint)</dcterms:medium>
          <dcterms:hasFormat>watercolor</dcterms:hasFormat>
          <dcterms:temporal>American</dcterms:temporal>
          <dcterms:abstract/>
          <dcterms:educationLevel>1f6058c8-04a1-4e12-9b64-acba10c4d3cb</dcterms:educationLevel>
          <dcterms:mediator>6f1e03db59485f0724b606c28386fee2</dcterms:mediator>
        </oai_qdc:qualifieddc>
      </metadata>
    </record>
```

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# Installation and Steps

1. Open Command Prompt and deploy code from repository using

`“git clone git@gitlab.lib.utah.edu:mellon-grant-projects-public/mellon-grant-umfa-public.git project_name”`

or download code as “zip” then extract

1. Place Argus Data XML files into <files> folder
  2. Place hash code CSV file into <hash> folder
  3. In the Command Prompt, navigate to project folder using `“cd project_name\multi_doc”`
  4. In the Command Prompt, run script using `“php multi_doc_script.php”`
  5. Check output files located in <output> folder
  6. Compress output files into .rar format
-



# Preparing for Primo Normalization

Consulted with UMFA to determine:

→ **Fields to be mapped for Search>  
Display> Facet**

UMFA identified fields they would like to be searchable, facetable and displayed in the Full Details screen

→ **Display Labels**

UMFA identified display labels to be used

Argus element	DC Term	Display Label	Search	Display	Facet	Facet Label
<field id="ObjectID">	dc:identifier	Object ID	Y	Y	N	
<field id="ObjDescr">	dc:description	Description	Y	Y	N	
<link id="ObjArtist" linkfield="Term">	dc:creator	Artist	Y	Y	Y	Artist/Creator
<link id="ArtistLCN1" linkfield="DiscTerm">	dc:creator	Creator	Y	Y	Y	Author/Creator
<link id="ArtCreaULA" linkfield="DiscTerm">	dc:creator	Creator	Y	Y	Y	Author/Creator
<field id="Title">	dc:title	Title	Y	Y	N	
<field id="DateRange">	dc:date	Date	?	Y	Y	Creation Date
<link id="ObjOrigin" linkfield="Term">	dcterms:temporal	Origin	Y	Y	Y	Origin of Object
<link id="Medium" linkfield="Term">	dcterms:medium	Medium	Y	Y	Y	Medium
<link id="Materials" linkfield="Term">	dcterms:medium	Medium	Y	Y	Y	Medium
<link id="Technique" linkfield="Term">	dcterms:medium	Medium	Y	Y	Y	Medium
<link id="MatTechAA1" linkfield="DiscTerm">	dcterms:medium	Medium	Y	Y	Y	Medium
<link id="ObjectName" linkfield="Term">	dcterms:hasFormat	Object Name	Y	Y	Y	Object Name
<field id="Label">	dcterms:abstract	Abstract	Y	Y	N	
<import><template id="Object"><record><field id="SystemKey">	dcterms:educationLevel	N/A	N	Y	N	
<import><template id="Object"><record><template id="Image"><record><field id="SystemKey">	dcterms:mediator	N/A	N	Y	N	



# Troubleshooting

After initial success, two large issues became apparent:

→ **Thumbnails**

ARGUS did not organically produce a unique identifier/ stable URL to images in the XML export file, so thumbnails were not displaying

→ **Direct Links**

“Link to resource” pointed to a title search within the ARGUS, rather than individual object records



# Solutions

## → **Thumbnails**

Consultation with ARGUS vendor revealed the only way to export thumbnails was through a separate export file

- ◆ Marriott altered Data Handling script to match thumbnails to their corresponding records

## → **Direct Links**

Accommodating the script to include <ObjectSystemKey> field and updating corresponding Primo configuration resolved the issue and made direct links to items functional



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## Art Metadata in Argus

- **Argus:** A flexible database used for collections management and front end discovery. Inconsistently used, substantial legacy metadata.
- **Goal:** Remediate creator, materials/techniques, date, and subject fields for > 20K object records.
- **Challenges:** Establishing a workflow to remediate terms that adhered to no standardized authority; creating a process that wouldn't interrupt daily workflows.

# Database Entry Solution

- No use of existing Lexicon; standardized terms uploaded to a new table specifically created to exist outside of thesaurus with no relationship to the thesaurus.
- No use of existing database fields; standardized terms were uploaded to a section of the object records created specifically for these terms.
- Data entry challenge currently partially resolved; processes and entries exist outside of the normal museum workflows and metadata must continually be remediated and added to the newly created table and object records.

## Creator

## Materials/Techniques

## Dates

### Spelling

Carlos Andreson  
Carlos Anderson  
Carlos J. Andreson

### Formatting

John Held II  
John Held, Jr.  
John Held, Jr

### Uncertain Creators

Daniel Mytens I (attributed)  
Peter Paul Rubens (studio)  
Francois Duquesnoy  
(manner of)  
Chinese  
Unknown

### Compound terms

Oil on panel  
Clear underglaze  
Enamel overglaze

### Spelling & Formatting

Terracotta  
Terra-cotta  
Pen and Ink  
pen and black ink

### Type of object vs. Materials/Techniques

Oil painting  
Jewelry  
Silk robe

### Calendars

Julian Calendar  
Proleptic Julian Calendar

### Uncertain Dates

Circa  
Lifespan of creator  
19th century  
Early 18th century

### Formatting

Circa/ca./c.  
1/1/1900  
-1991-01-01 (Julian  
calendar)  
1644-12-31 23:59:59 UTC

# Remediation Process

- OpenRefine chosen early on as remediation solution; easy to use interface and very active user community.
- Initially no OpenRefine reconciliation service for Getty vocabularies; used a reconciliation service in beta release.
- Use of Library Congress authorities proved more difficult as LC has not developed a recon service specifically for OR.
- Relied on individuals who had created OR reconciliation services that queried VIAF for LC Terms.

## Remediation Process (cont.)

- Materials/Techniques: Formatting required use of GREs to split compound terms, remove duplicates.
- Creator: Remediated using both LC and Getty ULAN. Used an individually created recon service for LC that only functions in older releases of OR (service not maintained).
- Dates: Workflow is in development; will require several GREs to split data accurately and then reformat as 0000-0000 for use in Primo.



# Rethinking the stand-alone portal

The original plan to create a niche discovery portal for materials only related to Landscape, Land Art, and the American West evolved over time.

## → **Challenges segmenting data**

We were able to scope data at the collection level, but item level scoping presented challenges for both the curators and technical team

## → **Better exposure & sustainability**

Bringing museum resources into USEARCH would make them discoverable to a much larger audience and remove the need for constant curation.



# Putting it all together: Integrating UMFA materials into USEARCH

The screenshot shows the USEARCH search results page for the query "Pomegranates". The page header includes the University of Utah logo, navigation links (NEW SEARCH, ONLINE JOURNALS, FETCH ITEM, ASK THE LIBRARY), and user options (LOG IN, Menu). The search bar contains "Pomegranates" and the results are displayed on "PAGE 1" of "121,807 RESULTS".

The results list includes:

- ARTWORK**  
**Pomegranates**  
Melton, Deann 1985  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
Online Access >
- ARTWORK**  
**Pomegranates**  
Suchtelen, A. van (Adrian van), 1941- 1978  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
Online Access >
- ARTWORK**  
**Pomegranates**  
Suchtelen, A. van (Adrian van), 1941- circa 1961-2000  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
Online Access >
- VIDEO**  
**The color of pomegranates = նրան ԳՈՒՅՆԸ The color of pomegranates = Նրան Գույնը**  
Paradzhanov, Sergei, 1924-1990, film director, screen writer; Beknazaryan, Hamo, 1892-1965, film producer; Mansuryan, Tigran, 1939- composer; Chiaureli, Sofia, 1937-2008, actor; Alekxanian, M., actor; Galstyan, V., actor; Holloway, Ronald, film director, screenwriter; Sayat'-Nova, 1712-1795; Armenfilm (Firm), production company, copyright holder; Kino International Corporation, production company, copyright holder; O-Film (Firm), production company, copyright holder; New York: Kino on Video  
Available at Marriott Library ARC Click Request: DVD & Blu-Ray (PH1997 .C65L7 2001) >
- ARTICLE**  
**Pomegranates**  
Hansel, Pauletta

The right sidebar offers filters for "Tweak my results", "Sort by relevance", "Availability" (Full Text Online, Peer-reviewed Journals, Available in the Library, Open Access), "Resource Type" (Articles, Newspaper Articles, Newsletter Articles, Book Chapters, Reviews, Show More), "Location" (ProQuest Central, Gale General OneFile, Business Insights: Global, Factiva, Gale Academic OneFile, Show More), and "Author/Creator".



# Unified Discovery

Merging museum materials alongside U of U Libraries' ALMA , CDI, and Digital Collections resources

## → **USEARCH**

University of Utah Libraries Discovery Portal (Primo Classic)) provides access to resources from the J. Willard Marriott, Eccles Health Sciences, McKay Music, and Faust Law libraries

## → **Ensuring Discoverability of Museum materials**

Creating unique facets and resource types

# Bespoke Local Facets for UMFA Materials

## → Medium

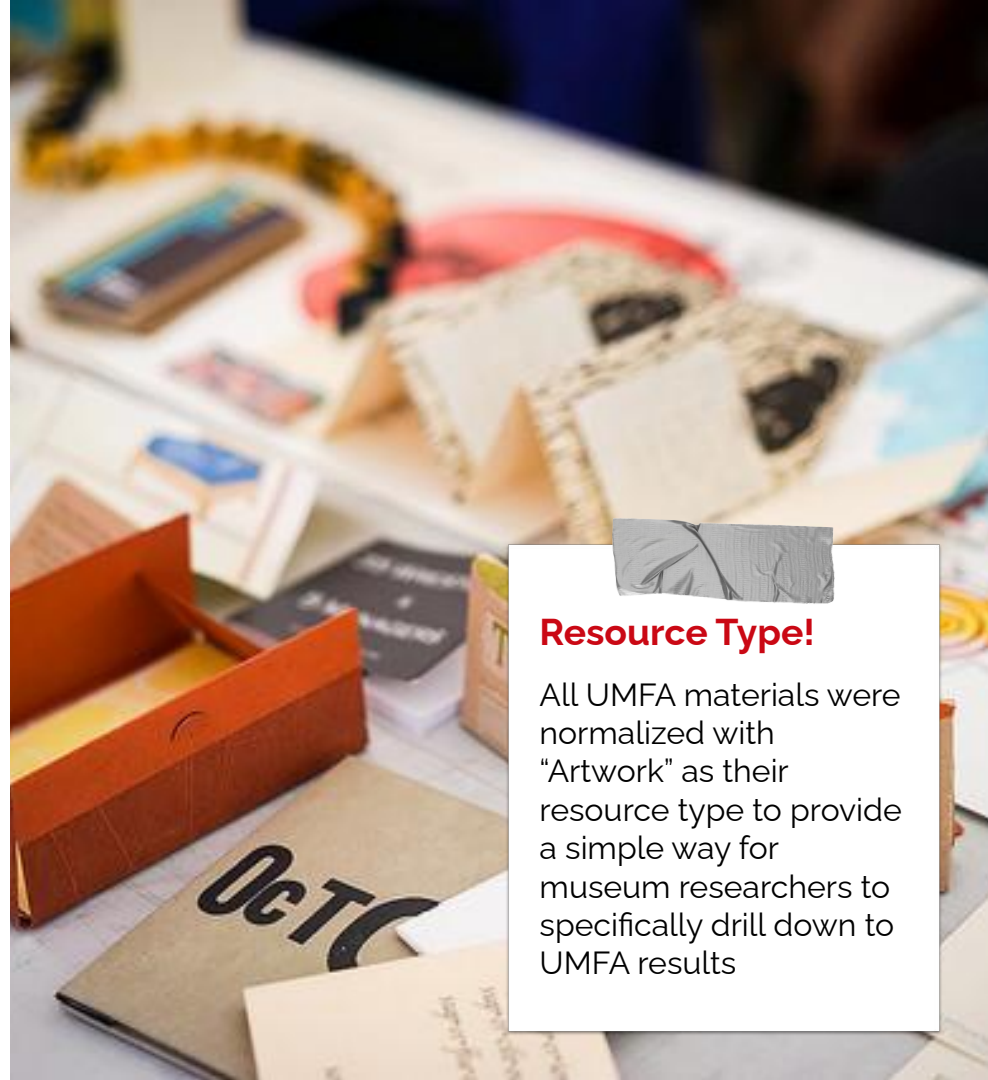
Displays the data from museum fields for “Medium,” “Materials,” “MatTechAA1” and “Technique” (which materials and techniques used to create the object: “high fire glaze,” “canvas,” “enamel,” etc...)

## → Artwork Type

Displays the data from museum fields for “ObjectName” (what the object is: “vase,” oil painting,” “etching,” etc...).

## → Origin

Displays the data from museum data field for “ObjOrigin” (where the object was created: Chinese, American, French, etc...)



## Resource Type!

All UMFA materials were normalized with “Artwork” as their resource type to provide a simple way for museum researchers to specifically drill down to UMFA results

Search anything



ADVANCED SEARCH

## Welcome to Usearch!

Discover resources provided by the Marriott, Eccles Health Sciences, Faust Law, McKay Music libraries and the Utah Museum of Fine Arts.

- Find books, journals, digital content and more using one search interface
- Access e-books and e-journals with one click
- Save items in a personal e-Shelf or export them to EndNote
- Narrow your results by availability, collection, resource type, topic, publication date, language, author, and classification
- Get suggestions for different searches or strategies if you don't find what you need
- Preview full-text and audio-visual materials straight from the results list
- Easy access to My Library Account
- NEW!! Discover artwork from the Utah Museum of Fine Arts

## Where can I get help?

[Ask a librarian](#) how to start your search

## Resources Provided by:

[Marriott Library](#)

[Eccles Health Science Library](#)

[Faust Law Library](#)

[McKay Music Library](#)

[Utah Museum of Fine Arts](#)

pomegranates

X / All Resources

ADVANCED SEARCH

Sign in to get complete results and to request items [LOG IN](#) | [DISMISS](#)

0 selected PAGE 1 20,976 RESULTS

- ARTWORK**  
**Pomegranates**  
Melton, Deann 1985  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
[Online Access](#)
- ARTWORK**  
**Pomegranates**  
Suchtelen, A. van (Adrian van), 1941- 1978  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
[Online Access](#)
- ARTWORK**  
**Pomegranates**  
Suchtelen, A. van (Adrian van), 1941- circa 1961-2000  
This artwork is at the Utah Museum of Fine Arts at the University of Utah.  
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**The color of pomegranates = ԵՌԱԱՆ ԳՈՒՅՆԸ. The color of pomegranates = Nran guynë**  
Paradzhanov, Sergei, 1924-1990, film director, screen writer.; Beknazaryan, Hamo, 1892-1965, film producer.; Mansuryan, Tigran, 1939- composer.; Chiaureli, Sof'ia, 1937-2008, actor.; Aleksanian, M., actor.; Galst'yan, V., actor.; Holloway, Ronald, film director, screenwriter.; Sayat'-Nova, 1712-1795.; Armenfilm (Firm), production company, copyright holder.; Kino International Corporation, production company, copyright holder.; O-Film (Firm), production company, copyright holder. ©2001  
New York : Kino on Video  
[Available at Marriott Library ARC Click Request: DVD & Blu-Ray \(PN1997 .C65I7 2001\)](#)
- ARTICLE**  
**Pomegranates**  
Hansel, Pauletta  
Atlanta: Poetry Atlanta, Inc  
Atlanta review, 2013, Vol.20 (1), p.80  
**PEER REVIEWED**  
[Full text available](#)
- BOOK**  
**Pomegranate**  
Caligiani, Augusta 2016  
Hauppauge: Nova Science Publishers, Incorporated  
[Full text available](#)

Tweak my results

Expand article level results beyond University of Utah resources

Sort by relevance

Availability

Full Text Online (20,945)

Peer-reviewed Journals (7,866)

Available in the Library (37)

Open Access

Resource Type

Articles (12,365)

Newspaper Articles (5,616)

Newsletter Articles (1,527)

Reviews (349)

Images (339)

Show More

Location

Author/Creator

Collection

Medium

canvas (1)

enamel (fused coating) (1)

etching (1)

high fire glaze (1)

high firing (1)

Show More

Artwork Type

etching (1)

oil painting (1)

vase (1)

watercolor (1)

Subject

Science & Technology (5,579)

pomegranates

✕ / Books, Articles & More ▾ / All Resources ▾



ADVANCED SEARCH

0 selected 4 RESULTS



ARTWORK

**Pomegranates**

Melton, Deann 1985

This artwork is at the Utah Museum of Fine Arts at the University of Utah.

[Online Access](#) [▯](#) [>](#)



ARTWORK

**Pomegranates**

Suchtelen, A. van (Adrian van), 1941- 1978

This artwork is at the Utah Museum of Fine Arts at the University of Utah.

[Online Access](#) [▯](#) [>](#)



ARTWORK

**Pomegranates**

Suchtelen, A. van (Adrian van), 1941- circa 1961-2000

This artwork is at the Utah Museum of Fine Arts at the University of Utah.

[Online Access](#) [▯](#) [>](#)



ARTWORK

**Famille Rose Palace Vase**

1800-1849

This artwork is at the Utah Museum of Fine Arts at the University of Utah.

[Online Access](#) [▯](#) [>](#)



Results Per Page: 10  50

Active filters

**Artwork** ✕

Remember all filters

Tweak my results

Expand article level results beyond University of Utah resources

Sort by **relevance** ▾

Availability ^

Full Text Online (4)

Location ^

Utah Museum of Fine Arts (4)

Author/Creator ^

Suchtelen, A. van (Adrian van), 1941- (2)

Melton, Deann (1)

Medium ^

canvas (1)

enamel (fused coating) (1)

etching (1)

high fire glaze (1)

high firing (1)

Show More

Artwork Type ^

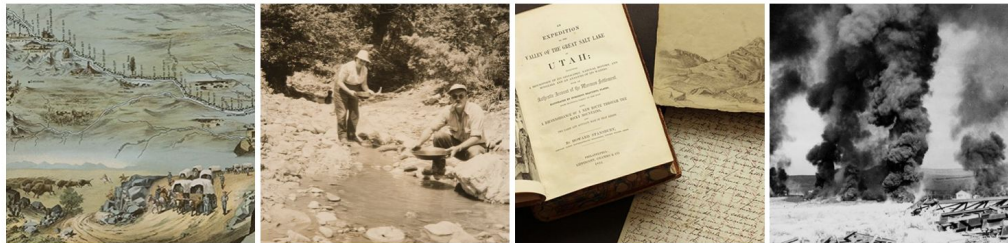
etching (1)

oil painting (1)

vase (1)

watercolor (1)





## Discover UMFA and Marriott Library Collections

Explore both the Utah Museum of Fine Arts' and the J. Willard Marriott Library's catalogs in a single search. This search function brings together the Museum's collection of visual art and the Library's holdings of rare books, journals, manuscripts, digital images, and more.

Use the Museum+Library search below.

### Search Tips:

1. Narrow your results with "[Advanced Search](#)" filters
2. Use the sidebar menu to refine your results:
  - Click on Location > Utah Museum of Fine Arts to locate objects at the UMFA
  - Select Author/Creator, Artwork Type, Medium, and/or Date for detailed results

# Project Overview

**2019**

## Early Work

- Systems investigation
- Identified viable fields in ARGUS to test crosswalk
- Primo Sandbox view created
- Consultations with other libraries & museums
- Initial harvest tests
- Data remediation
- User Experience Focus Groups

**2020**

## Primo Customization & Troubleshooting

- Refined the metadata crosswalk
- Initial full import
- Transformation script
- Normalization Rules
- Display set up
- Addressed Thumbnails/direct linking issues
- Direct links
- Ongoing data remediation

**2021**

## Integration & Soft Launch

- Pivot from stand-alone portal to USEARCH integration
- Copied set-up from Sandbox and scoped for integrated view in production
- Full prod data import
- Soft launch in USEARCH

**2022**

## Going live & Going Forward

- Official “go live”
- Fine Tuning
- Grant wrap-up
- Sustainability planning
- Drafted MOU with UMFA for ongoing work



# Ongoing work

- Harvesting remains a manual process involving UMFA exporting one xml file of their object data and another providing thumbnail IDs → Marriott programmer running transformation script → Marriott running the Primo harvest pipe
- Data remediation
- Scripting updates as they arise
- Normalization and display updates as they arise
- User Experience Testing

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# Additional thanks to:

## Library

- Alberta Comer
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- Brian McBride

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- Maria Botvinik
- Troy Gnat
- Clarice Shin

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- Gretchen Dietrich
- David Carroll
- Whitney Tassie
- Addie Ryder
- Alana Wolf-Johnson

## Lucidea/Argus

- Benitta MacLachlan
  - Emma Hathaway
- 



## University of Utah Indigenous Land Acknowledgement Statement (Short text)

We acknowledge that this land, which is named for the Ute Tribe, is the traditional and ancestral homeland of the Shoshone, Paiute, Goshute, and Ute Tribes. The University of Utah recognizes and respects the enduring relationship that exists between many Indigenous Peoples and their traditional homelands. We respect the sovereign relationship between tribes, states, and the federal government, and we affirm the University of Utah's commitment to a partnership with Native Nations and Urban Indian communities through research, education, and community outreach activities.

