Prioritizing Collections for Digitization

The Digitization 101 webinar series is a national education program of the Conservation Center for Art & Historic Artifacts provided with support from grants from the National Endowment for the Humanities and the William Penn Foundation.
Why Prioritize?

- Establish goals and scope for your project
- Make project more manageable
- Maintain momentum
- Help secure funding
- Help advocate for resources

Why Prioritize?

Steps that follow will help you rank various collections depending on their:

- Value to institution and stakeholders
- Limiting factors such as copyright and intellectual control
- Physical condition

Look at What You Have

• Ask questions about your goals and audience
  • What do you want to digitize?
  • Look to your mission for guidance.
  • How much material do you want to digitize?
  • Where will the images be made available?
  • Who is it for?

Moriz Jung, Variety Act 12: One for All, All for One or a Glimpse through the Keyhole, 1907. Metropolitan Museum of Art.
Look at What You Have

- Review any materials that have already been digitized.
  - Why were these materials selected?
  - Who uses the digital files, and how?
  - How were these collections digitized? Did they do a good job?
  - How were prior digitization projects funded?
  - Where are digitized collections stored?

Moriz Jung, *Variety Act 12: One for All, All for One or a Glimpse through the Keyhole*, 1907. Metropolitan Museum of Art.
Invite Input from Stakeholders

- Non-collection staff and upper administration
- Researchers or scholars
- General public
- Have an agenda and a plan

Invite Input from Stakeholders

• What materials or collections:
  • Are considered the most valuable to the institution?
  • Are most popular with visitors or users?
  • Hold the highest scholarly value?
  • Have the highest monetary value?
  • Have grant or fundraising appeal?
  • Have visual appeal?

Determine Limiting Factors

• Which parts of the collection have been accessioned / processed / inventoried?
• Do any materials have copyright issues?
• Do any materials contain personally identifying information, medical information, or culturally sensitive information?
• How unique are the materials? Are any materials in digital format elsewhere?
• How uniform are your collections?

Ask Questions About Condition

- Where is your physical material stored? Are any collections difficult to access?
- Do materials require special handling, such as book cradles, weights, supports, or just extra care?
- Do materials require intervention by an archivist such as removing fasteners or encapsulation?
- Are any collections actively deteriorating? These could include film negatives, brittle newspapers, etc.
- Do any collections require conservation treatment before they're safe to handle?

## Weed Out Materials

<table>
<thead>
<tr>
<th>Collection Name</th>
<th>Under Copyright</th>
<th>Contains Sensitive Information</th>
<th>Unprocessed</th>
<th>Digitize?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith Family Papers</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Wait</td>
</tr>
<tr>
<td>Church Records</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Proceed</td>
</tr>
<tr>
<td>Town Records</td>
<td>Maybe</td>
<td>Maybe</td>
<td>No</td>
<td>Evaluate further</td>
</tr>
</tbody>
</table>
# Prioritize Further

<table>
<thead>
<tr>
<th>Collection Name</th>
<th>Scholarly Value</th>
<th>Grant Appeal</th>
<th>Collection Uniformity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early photography collection</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Church Records</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Correspondence</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>
Record Your Decisions

• Record decisions in writing
• Incorporate into Selection Policy or create a new policy
• Continue to update

Examples

Dartmouth College Library - Selection Policy for Digitization
https://www.dartmouth.edu/~library/digital/about/policies/selection.html

Georgetown University Library - Digital Collections Development Policy
https://www.library.georgetown.edu/digital-project-policy

Amherst College – Digital Collection Development Policy
https://www.amherst.edu/library/services/digital/digitalcolldev

Coming Up

• File Storage for Digitization – June 30
• File Specifications for Digitization – July 7
• Metadata for Digitization – July 14
• In-house vs Outsourcing and Quality Control – July 21
• Equipment Selection – July 28

Questions?

Email: mdowning@ccaha.org

File Storage for Digitization

The Digitization 101 webinar series is a national education program of the Conservation Center for Art & Historic Artifacts provided with support from grants from the National Endowment for the Humanities and the William Penn Foundation.
File Storage Considerations

• Protect your investment!
• Management software programs
• Types of file storage
• Redundancy and backups
• Calculating storage space needs

Edmund Dulac, illustration from The Snow Queen. Picture Collection, The New York Public Library.
Collection Management System (CMS)

- Stores information about your collection items, and can include:
  - Donor information
  - Physical description, location, and condition
  - Loan information
  - Can store images
  - Can link to a web platform to make collections searchable online
- Locally stored or cloud-based
- Proprietary or open source
- Examples: PastPerfect, Embark, and Collective Access

Digital Asset Management System (DAMS)

- Manages the organization and distribution of the files themselves

- Some programs are suitable as both a CMS and a DAMS
  - Such as DSpace, The Museum System (TMS), and ContentDM

Types of File Storage

- Network Attached Servers (NAS)
- Cloud Storage
  - Amazon Web Services (AWS)
  - Microsoft Azure
  - Costs vary based on amount of storage and level of access
- Hosted Storage
  - Preservica
  - DuraCloud
- Removable Media
  - Optical disks, hard drives, flash drives

Keep Your Files Safe

• Threats to digital files
  • Obsolescence, accidental deletion, viruses, hacking
• LOCKSS – Lots Of Copies Keeps Stuff Safe
• 3-2-1 Principle for backups
  • 3 copies of your files
  • 2 media types
  • 1 in another geographic location

Paul Bransom, illustration from *The Lion and the Mouse*, 1921. Picture Collection, The New York Public Library.
Keep Your Files Safe

• Generate a checksum for your files
  • Digital fingerprint
  • Changes in the bitstream of the file changes
  • Digital Preservation Coalition Handbook section on Fixity and Checksums:

Paul Bransom, illustration from The Lion and the Mouse, 1921. Picture Collection, The New York Public Library.
How Much Storage Do You Need?

- How many items you want to digitize?
- What file size will you get from scanning at the resolution you need?
- Will you be scanning negatives and then making additional positive files?
How Much Storage Do You Need?

• Don't forget the derivative files you want to addition to master copies.

• Are you incorporating video or sound collections that you want to digitize?

• Plan for the future! Select a storage option that you can add onto incrementally.

How Much Storage Do You Need?

Example:

• 8x10 print – 16-bit, color, 400 dpi TIFF
  • Produces a file size of about 75 MB
  • A JPEG derivative copy will add about 7MB
  • 1,000 prints = at least 82 GB for one set of files

Manage Your Files

- Monitor files
  - Fixity checks
- Maintain technical infrastructure:
  - Maintain hardware, software, facilities, supplies
- Migrate files
  - Convert data to latest file formats or relocate to new storage media
  - Consider a migration schedule every 5-10 years

Edmund Dulac, illustration from *Cinderella*. Picture Collection, The New York Public Library.
Resources

- Additional DHPSNY & CCAHA webinars: [https://dhpsny.org/webinars](https://dhpsny.org/webinars) / [ccaha.org/events](ccaha.org/events)
- Digital Preservation Coalition: [https://www.dpconline.org/](https://www.dpconline.org/)
- Digital POWRR: [digitalpowrr.niu.edu/](digitalpowrr.niu.edu/)

Coming Up

• File Specifications for Digitization – July 7
• Metadata for Digitization – July 14
• In-house vs Outsourcing & Quality Control – July 21
• Equipment Selection – July 28

Questions?

Email: mdownning@ccaha.org

Edmund Dulac, illustration from Beauty and the Beast. Picture Collection, The New York Public Library.
File Specifications for Digitization

The Digitization 101 webinar series is a national education program of the Conservation Center for Art & Historic Artifacts provided with support from grants from the National Endowment for the Humanities and the William Penn Foundation.
Terminology

• File Format
• Resolution
• Color
• Bit Depth
• Color Space
• Cropping
• File Naming
File Format

• Convention for encoding data into human-readable form

Resolution

Color

Bit Depth

1-bit (2 tones available per pixel)

8-bits (256 tones available per pixel)

Color Space / Color Profile

Defines the range and tones available in the file.

Examples of common color spaces:
• **sRGB** – low range of color, common in web publication
• **Adobe RGB 1998** – medium range of color, widely adopted
• **ProPhoto RGB** – huge range of color, newer

Color tutorial: Understanding Color Spaces
https://www.youtube.com/watch?v=KKX08oOTMkk
File Naming

• Structure for naming files

Standards and Recommendations

American Library Association (ALA): Minimum Digitization Capture Recommendations
http://www.al.org/alcts/resources/preserv/minimum-digitization-capture-recommendations

National Archives and Records Administration (NARA): Technical Guidelines for Digitizing Archival Materials


FADGI Guidelines

- Bound Volumes
- Documents
- Oversize Items: Maps, Posters and Other Materials
- Newspapers
- Prints and Photographs
- Photographic Transparencies of various sizes
- Paintings
- X-Ray Film
- Microfilm

FADGI Guidelines

- Quality-Level Ratings – 1-star through 4-star
  - Focus on 3- or 4-star levels for digital surrogates
- Performance Levels
  - File format
  - Resolution
  - Bit Depth
  - Color Space
  - Color

Example of Performance Levels Table

<table>
<thead>
<tr>
<th>Performance Level:</th>
<th>1 Star</th>
<th>2 Star</th>
<th>3 Star</th>
<th>4 Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master File Format</td>
<td>TIFF</td>
<td>TIFF</td>
<td>TIFF</td>
<td>TIFF</td>
</tr>
<tr>
<td>Access File Formats</td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Resolution</td>
<td>100 ppi</td>
<td>200 ppi</td>
<td>400 ppi</td>
<td>800 ppi</td>
</tr>
<tr>
<td>Bit Depth</td>
<td>8</td>
<td>8</td>
<td>8 or 16</td>
<td>16</td>
</tr>
<tr>
<td>Color</td>
<td>Grayscale or Color</td>
<td>Grayscale or Color</td>
<td>Color</td>
<td>Color</td>
</tr>
</tbody>
</table>
File Format

Master files – TIFF
- Widely adopted
- Accommodates variety of color spaces
- High-bit compatible, suitable for large file sizes

Derivative files
- PDF – Great for multi-page objects
- JPEG—Smaller files, good for email and websites

Resolution

Examples:
- Newspapers – 300 ppi or 400 ppi
- Prints and Photographs – 400 ppi or 600 ppi
- 4x5" photographic transparency – 1,500 ppi or 2,000 ppi
- 35mm photographic transparency – 3,000 ppi or 4,000 ppi

Bit Depth

- **Lower bit depth – 8-bit**
  - Documents, newspapers, microfilm, e.g.

- **Higher bit depth – 16-bit**
  - Fine art, prints, and photographic negatives, e.g.

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**Prints and Photographs**

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<th>3 Star</th>
<th>4 Star</th>
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<tr>
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<td>TIFF</td>
<td>TIFF</td>
</tr>
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<td><strong>Access File Formats</strong></td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>100 ppi</td>
<td>200 ppi</td>
<td>400 ppi</td>
<td>600 ppi</td>
</tr>
<tr>
<td><strong>Bit Depth</strong></td>
<td>8</td>
<td>8</td>
<td>8 or 16</td>
<td>16</td>
</tr>
</tbody>
</table>

Color Space

- FADGI Recommendations
  - Grey Gamma 2.2 - black and white
  - SRGB – low color range, common in web publication
  - Adobe 1998 – medium color range, widely adopted
  - ProPhoto – wide color range, newer

Color

- Will you scan in color or in black and white?
- Black and white files are about 1/3 the size of color files.

<table>
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<th>4 Star</th>
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<td>Bit Depth</td>
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<td>8</td>
<td>8 or 16</td>
<td>16</td>
</tr>
<tr>
<td>Color Space</td>
<td>Grey Gamma 2.2</td>
<td>Grey Gamma 2.2</td>
<td>Adobe 1998</td>
<td>Adobe 1998</td>
</tr>
<tr>
<td></td>
<td>sRGB</td>
<td>sRGB</td>
<td>ProPhoto</td>
<td>ProPhoto</td>
</tr>
<tr>
<td></td>
<td>Adobe 1998</td>
<td>Adobe 1998</td>
<td>ECIRGBv2</td>
<td>ECIRGBv2</td>
</tr>
<tr>
<td>Color</td>
<td>Grayscale or Color</td>
<td>Grayscale or Color</td>
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<td>Color</td>
</tr>
</tbody>
</table>

Cropping

• Master file – Show all edges of object

• Derivative file – Can be cropped

File Naming

• Unique and consistently structured
• Should have some level of description
  • Example: StOlaf_RML_Felland_0001.tif vs. 0001.tif
• Use leading zeros when you are numbering items or pages
  • 0001, 0002, ... 1023, etc.
• Do not include shelf numbers or locations in file names
• ALA Minimum Digitization Capture Recommendations
  http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations

Record Your Decisions

• Consult guidelines to select your file specifications
  • FADGI, NARA, ALA
  • Colleagues at other institutions

• Record in a digitization plan for your institution

• Will help you to digitize consistently over the life of the project

• Can be referred to by people picking up the project later
Resources

• Examples of institution digitization guides
  • Digital North Carolina: http://www.digitalnc.org/policies/digitization-guidelines/
  • Columbia University Libraries Imaging Standards & Procedures: https://library.columbia.edu/bts/imaging.html

• FADGI Audio Visual Working Group resources:
  • http://www-digitizationguidelines.gov/audio-visual/

Coming Up

• Metadata for Digitization – July 14
• In-house vs Outsourcing & Quality Control – July 21
• Equipment Selection – July 28

Questions?

Email: mdowning@ccaha.org

Metadata for Digitization

The Digitization 101 webinar series is a national education program of the Conservation Center for Art & Historic Artifacts provided with support from grants from the National Endowment for the Humanities and the William Penn Foundation.
Metadata

This session will discuss:
• Definition and importance of metadata & controlled vocabularies
• Creating internal procedures for metadata creation
• Associating metadata with your files
• Collection Management System selection

Definition of Metadata:
Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource.

- from the National Information Standards Organization (NISO)
Metadata Types

Some metadata mirrors what is created for physical records

- **Descriptive** – Describes the item, including title, date, subject, etc.
- **Administrative** – Copyright and access restrictions

Some metadata is just for digital records

- **Technical** – Scanner/camera, date created, pixel dimensions, etc.
- **Structural** – File’s relation to other files
- **Preservation** – Checksums, history of data corruption or recovery

*Impatiens pallida*. Illinois Natural History Survey.
Importance of Metadata

Metadata supports:

• Discovery of the resources through the ability to search
• Provides insight into your collections
• Facilitates sharing resources across institutions
• Helps maintain control over access and restrictions
• Helps manage digital records for the future
Metadata Schema

Metadata standards help to ensure that metadata is applied consistently within an institution and across institutions. Examples:

- Dublin Core Metadata Initiative (DCMI)
- Machine-Readable Encoding (MARC)
- Encoded Archival Description (EAD)

University of Texas Libraries: Metadata Basics
https://guides.lib.utexas.edu/metadata-basics/intro

Controlled Vocabularies

Metadata schema are supported by controlled vocabularies.

• Standardized and organized arrangements of words and phrases that provide a consistent way to describe data.

Examples:

• Library of Congress Name Authority File (LCNAF)
• Library of Congress Subject Headings (LCSH)
• Getty Union List of Artist Names (ULAN)
• Getty Art & Architecture Thesaurus (AAT)

Names from Getty ULAN

Muybridge, Eadweard (preferred)
Eadweard Muybridge
Helios
Muggeridge, Edward James
Muybridge Eadweard J.
Muybridge, E. J.
Muybridge, Eadweard J.
Eadweard J. Muybridge

Create a Data Dictionary

- Data dictionaries document:
  - Element names and definitions
  - Obligation (required or optional)
  - Guidance on use

- When drafting metadata procedures, consider:
  - What metadata do you currently use?
  - Who is your audience, and what terminologies will they understand?
  - What resources are available to create the metadata?
    - What tools do you have?
    - What skills do your staff and/or volunteers have?
  - Who will you share your metadata with?
Data Dictionary

Digital Public Library of America (DPLA)

- Review metadata guidelines for your state or regional hub
  Example: New York Heritage Data Dictionary, 2019

Associating Metadata

• Collection management system
  • The Museum System (TMS), Embark, PastPerfect, or ContentDM
• Excel or Access table for smaller-scale projects

EmbARK Collections Manager demo database.
Associating Metadata

- Metadata can be embedded into the file itself
  - Technical metadata is embedded automatically
  - Additional metadata can be embedded within the file
    - At the time of capture using scanner or photo processing software
    - Or on the final files using tools such as Adobe Bridge
- Not a requirement if metadata is recorded elsewhere and corresponds with file names
- Added layer of security
Selecting a CMS

• Lots on the market
• Vary in cost, functionality, and level of required staff expertise
• Important things to consider:
  • Open-source or proprietary software
  • Hosting files locally or online
  • Cost and ease of use
  • Ease of integration with current data management system
  • Ease of importing and exporting metadata
Selecting a CMS

- American Association for State and Local History (AASLH)
  Technical Leaflet on Choosing a Collection Management Software
  https://d221a1e908576484595f-1f424f9e28cc684c8a6264aa2ad33a9d.ssl.cf2.rackcdn.com/aaslha28f1bb1d5ab7592af01b9bbac64dc95.pdf

- Ashley Blewer’s “Collection Management System Collection”
Document Metadata Decisions

• Data dictionary and metadata plan for your institution
• Procedures for metadata entry
• Include or reference in your digitization plan

Margaret Armstrong, Opuntia Basilaris, 1912. Metropolitan Museum of Art.
Resources

- Sustainable Heritage Network Resources
  http://sustainableheritagenetwork.org/digital-heritage


Coming Up

- In-house vs Outsourcing & Quality Control – July 21
- Equipment Selection – July 28
Questions?

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What We'll Discuss

• Where to do the actual digitization of your material:
  • In-house with purchased equipment
  • Outsourcing to a digitization vendor

• What to look for in a vendor

• Quality Control Procedures
  • Image Quality
  • Metadata
Decisions, decisions...

- Scanning is only about 1/3 of project time in a digitization project.

- Cataloging description, indexing, preparation, and project management make up the other two thirds.

- If you’re applying for grants, this staff time can often count toward in-kind fundraising requirements.
# Digitizing In-House

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have more control over process</td>
<td>Requires lots of resources: staff training and equipment purchase</td>
</tr>
<tr>
<td>In-house expertise on hand</td>
<td>Need to budget for equipment repairs and upgrades</td>
</tr>
<tr>
<td>Security</td>
<td>Need for dedicated space</td>
</tr>
<tr>
<td>Learn new skills</td>
<td>Potentially limited staff expertise</td>
</tr>
<tr>
<td>Once studio is set up, can establish an ongoing</td>
<td>Responsible for all quality control</td>
</tr>
<tr>
<td>digitization operation</td>
<td></td>
</tr>
</tbody>
</table>

Outsourcing Digitization

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster</td>
<td>Less flexibility, project scope must be clearly established, and all decisions made ahead of time</td>
</tr>
<tr>
<td>No in-house technical expertise required</td>
<td>Must have very clear communication</td>
</tr>
<tr>
<td>High production levels</td>
<td>Risk to originals in transportation</td>
</tr>
<tr>
<td>Vendor provides quality control</td>
<td></td>
</tr>
<tr>
<td>Don’t have to pay for equipment or training</td>
<td></td>
</tr>
</tbody>
</table>

What To Look For in a Vendor

• Written quality control procedures
• Staff expertise in handling fragile materials
  • Conservators on staff if necessary
• References and sample projects
• Security and safety measures to protect objects in their care
  • Secure, fire-resistant, climate-controlled storage
  • Climate-controlled lab and digitization studio spaces
  • No smoking, eating, or drinking in areas where documents will be handled
What to Include in an RFP

- Project timeline
- Can work be done at vendor facility or on-site?
- Number and size of originals
  - Approximate number of pages or images to capture
- Type of materials
  - Are materials bound, flat, or a mix?
- Condition issues or special handling notes
  - Are materials in mats or encapsulation?
  - Are there any fasteners like paper clips or staples?
- File specifications
  - File naming, cropping, resolution, bit depth, color, etc.
- Metadata requirements
- Do you to include packing and transportation costs?
What is Quality Control?

- Quality Control (QC) or Quality Assurance (QA)
  - Processes used to ensure that digitization and metadata creation are done properly.

- Address specific issues, identify accuracy requirements, and acceptable error rates for all aspects evaluated

- A quality control program should address:
  - What elements you’re looking at when reviewing materials
  - What percentage of files you’ll review
  - What causes a file to fail QC, and procedures for fixing

- NARA Technical Guidelines for Digitizing Archival Materials
QC: Image Quality

- CCAHA procedures for large-scale projects include an initial inspection and a final inspection

- Initial inspection
  - Correct file names
  - Orientation
  - Distortion
  - Scale reference (if required)
  - Cropping
  - Background color
  - Even tonal values and contrast
  - Completeness
<table>
<thead>
<tr>
<th>QC: Image Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 10% inspection of final files</td>
</tr>
<tr>
<td>- File format</td>
</tr>
<tr>
<td>- Compression</td>
</tr>
<tr>
<td>- Color mode</td>
</tr>
<tr>
<td>- Bit Depth</td>
</tr>
<tr>
<td>- Dimensions</td>
</tr>
<tr>
<td>- Resolution</td>
</tr>
<tr>
<td>- Metadata (as needed)</td>
</tr>
<tr>
<td>- Artifacts (physical or digital)</td>
</tr>
<tr>
<td>- Focus and overall image quality</td>
</tr>
</tbody>
</table>

- If a file fails, others around it are inspected.
- If more than 1% of inspected files fail, then the entire batch is inspected, failed files are corrected.
QC: Metadata

☐ Less defined in evaluation metrics
  ☐ Adherence to standards set by institutional policy
    ☐ Guided by data dictionary
  ☐ Relevancy and accuracy of metadata
  ☐ Consistency in the creation of metadata
  ☐ Consistency and completeness in the level at which metadata is applied
  ☐ Representation of different types of metadata.
    ☐ Has sufficient descriptive, technical, and administrative metadata been provided?

☐ NARA Technical Guidelines for Digitizing Archival Materials
Next Steps

- Decide whether you want to digitize in-house or outsource to a vendor
- Draft written Quality Control procedures
- Start requesting estimates from vendors or planning for equipment purchase
Questions?

Coming Up
• Last webinar in series: Equipment Selection – July 28

Email: mdowning@ccaha.org
Equipment Selection

The Digitization 101 webinar series is a national education program of the Conservation Center for Art & Historic Artifacts provided with support from grants from the National Endowment for the Humanities and the William Penn Foundation.
What We'll Discuss

- Types of Equipment
  - Flatbed scanners
  - Camera and copystand
  - Specialty scanners
- Software
- Targets and calibration
## Flatbed Scanners

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small, can fit on a desk in a small space</td>
<td>Scan time can be slow</td>
</tr>
<tr>
<td>Enclosed environment</td>
<td>Not ideal for bound material</td>
</tr>
<tr>
<td>Affordable</td>
<td>Not ideal for friable media</td>
</tr>
<tr>
<td>Easy to learn</td>
<td>Limited to size of scan bed</td>
</tr>
<tr>
<td>Good for collections of small, unbound, flat material, with stable</td>
<td></td>
</tr>
<tr>
<td>surfaces</td>
<td></td>
</tr>
<tr>
<td>Good for photographic negatives and transparencies</td>
<td></td>
</tr>
</tbody>
</table>
Scanning Software

- Third-party scanning software such as Silverfast or Vuescan
  - Provides customization in scanning options
  - Comes with built-in calibration software

- Image editing and processing software
  - Creative Cloud applications – Lightroom, Bridge, Photoshop

- Optical Character Recognition (OCR)
  - Adobe Acrobat Pro or Abbyy FineReader

Discounted rates for non-profits through TechSoup: 
https://www.techsoup.org/
What to Look For in a Scanner

- Size of scan bed
- Resolution
- Bit depth and color space options
- Ability to scan transparencies
- Compatible with third-party scanning software
- Return policy
  - Test out scanner with a range of materials

Library of Congress Tip Sheet: What to Look for in a Scanner
- https://www.loc.gov/rr/print/tp/LookForAScanner.pdf
Camera / Copystand

- Components
  - 2 lights
  - Camera wired to a computer
  - Copystand
  - Table surface
  - Book cradle or easel
## Camera / Copystand

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very versatile</td>
<td>Expensive</td>
</tr>
<tr>
<td>Speedy capture</td>
<td>Higher learning curve</td>
</tr>
<tr>
<td>Modular setup</td>
<td>More variables that affect image quality</td>
</tr>
<tr>
<td>No contact with artifact, good for fragile items</td>
<td></td>
</tr>
<tr>
<td>Good for bound materials and objects</td>
<td></td>
</tr>
<tr>
<td>Can be adapted easily to capture negatives or objects</td>
<td></td>
</tr>
</tbody>
</table>
Supporting Software

- RAW processing software
  - Can apply adjustments to images in batches, crop, add metadata

- Adobe Creative Cloud
  - Photoshop, Lightroom, Bridge, and Acrobat Reader and more
What to Look For in Equipment

- **Camera**
  - Camera body – High resolution – Look at pixel dimensions
  - Lens – sharp and even in exposure
  - Ability to test camera and lens, in your own studio if possible
    - Check for even focus and exposure
    - Check for digital artifacts

- **Copystand**
  - Secure and sturdy, motorized if possible

- **Lighting**
  - Can either be continuous illumination or strobe
  - Well-balanced and even
Specialty Scanners

- **Oversize scanners**
  - Materials pass under scanning element on large table

- **Book scanners**
  - Overhead scanners
  - Good for large book collections or libraries

- **Film Scanners**
  - High quality scans, can be faster than flatbed scanners

Cruse table scanner

BookEye book scanner

Plustek film scanner
Federal Agencies Digitization Guidelines Initiative (FADGI) Guidelines have specific metrics for equipment calibration.

- Metrics designed to ensure that digital surrogates are scanned at a certain proven level, important for government agencies:
  - Tone Response
  - White Balance
  - Illuminance Uniformity
  - Color Accuracy
  - Contrast
  - Scale Accuracy
  - Sharpening

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FADGI Metrics

*Federal Agencies Digitization Guidelines Initiative (FADGI) Guidelines have specific metrics for equipment calibration.*

*Metrics designed to ensure that digital surrogates are scanned at a certain proven level, important for government agencies.*

- Tone Response
- White Balance
- Illuminance Uniformity
- Color Accuracy
- Contrast
- Scale Accuracy
- Sharpening

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DICE Targets and Software

- Specially designed targets for assessment
- Software tools analyze the targets

Image Access resource on Quality Controlled Scanning
Color Calibration

- Color calibration target
  - Assigned values for each color
- Can create custom profiles automatically
- Adjust in image editing programs by adjusting white balance and exposure
- Best to calibrate equipment as much as possible before making digital adjustments
Successful Digitization

- FADGI compliance not easy to achieve
  - Specialized targets and software
  - Top of the line equipment
- Don’t be discouraged from digitization
- Things you can do to ensure a successful digitization program:
  - Color calibration
  - Visual assessment
  - Checking for correct file specifications
  - Metadata and cataloging
  - Quality control program
  - Ongoing digital collection management
Wrapup and Questions

- What topics would you like to see in future sessions?
- Email: mdowning@ccaha.org