Basics of Collection Photography

Jennifer McGlinchey Sexton
MS Art Conservation
Connecting to Collections Care Webinar
September 2020
Outline

Considerations

Equipment

Documentation Space

Archiving

Workflows

Resources
## Considerations

<table>
<thead>
<tr>
<th>Category</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget</strong></td>
<td>Money available for equipment and staff</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>Timeline and duration of project</td>
</tr>
<tr>
<td><strong>Use</strong></td>
<td>Internal / Web / Publication</td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>Special storage requirements / Size</td>
</tr>
<tr>
<td><strong>Safe handling</strong></td>
<td>Training / Reduce Handling</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Digital Files / Backup</td>
</tr>
</tbody>
</table>
Targets

Color calibration targets
Grey card

RMI Conservation Target – Robin Myers Imaging
Image: rmimaging.com

ColorChecker Passport – X-rite
Image: bhphotovideo.com

AIC PhD Target – AIC/Robin Myers Imaging
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Targets

DICE, FADGI, international standards

Require specialized targets and calibration
Cameras

Digital SLR

Phone or mobile device

Mirrorless
Sensor Size

APS-C
Full Frame
Mobile device

Image quality is usually indicated by megapixels (MP)

8256 x 5504 = 45,441,024 pixels = 45MP

MP is not the whole picture
Consider sensor size
Comparison Tools

Digital Photography Review
www.DPReview.com

Side by side comparison tool

Look for
• Budget
• Specifications – sensor size, exposure modes, file types
• Project specific
  • video

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### Nikon D850 vs. Canon EOS R5 vs. Nikon Z50

<table>
<thead>
<tr>
<th>Camera</th>
<th>Price Range</th>
<th>Announced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nikon D850</td>
<td>$4,093.90 - $4,993.90</td>
<td>Jul 25, 2017</td>
</tr>
<tr>
<td>Canon EOS R5</td>
<td>$3,899.99 - $4,999.00</td>
<td>Jul 9, 2020</td>
</tr>
<tr>
<td>Nikon Z50</td>
<td>$856.95 - $1,196.95</td>
<td>Oct 10, 2019</td>
</tr>
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#### Basic Information

- **Buying options**
- **Review / Preview**
  - Nikon D850: 89% Gold Award, Read review Oct 16, 2017
  - Canon EOS R5: Read first impressions review Jul 9, 2020
  - Nikon Z50: 85% Silver Award, Read review Dec 18, 2019

### Price

- **MSRP**
  - Nikon D850: $3299
  - Canon EOS R5: $3899 (body only), $4999 (w/24-105mm F4 lens)
  - Nikon Z50: $859 (body), $999 (w/16-50mm lens), $1349 (w/16-50 and 20-250mm lenses)

### Body type

- **Body type**
  - Nikon D850: Mid-size SLR
  - Canon EOS R5: SLR-style mirrorless
  - Nikon Z50: SLR-style mirrorless

### Body material

- **Body material**
  - Nikon D850: Magnesium alloy
  - Canon EOS R5: Magnesium alloy
  - Nikon Z50: Magnesium alloy

### Sensor

- **Max resolution**
  - Nikon D850: 8256 x 5504
  - Canon EOS R5: 8192 x 5464
  - Nikon Z50: 5568 x 3712
- **Image ratio wch**
  - Nikon D850: 1:1, 5:4, 3:2, 16:9
  - Canon EOS R5: 1:1, 4:3, 3:2, 16:9
  - Nikon Z50: 1:1, 3:2, 16:9
- **Effective pixels**
  - Nikon D850: 45 megapixels
  - Canon EOS R5: 45 megapixels
  - Nikon Z50: 21 megapixels
- **Sensor photo detectors**
  - Nikon D850: 47 megapixels
  - Canon EOS R5: 47 megapixels
  - Nikon Z50: 22 megapixels
- **Sensor size**
  - Nikon D850: Full frame (35.9 x 23.9 mm)
  - Canon EOS R5: Full frame (36 x 24 mm)
  - Nikon Z50: APS-C (23.5 x 15.7 mm)
Quick and dirty tips

Camera settings
- Manual exposure option
- ISO as low as possible (100-200)
- F-stop: f 8 or f 11
- RAW capture
- Custom white balance
- Tethered capture

Exposure
- Auto exposure modes like aperture priority can be very useful
- Exposes to 18% gray
Quick and dirty tips

Lenses
• Fixed lenses tend to be better quality than zoom lenses
• Avoid wide angle lenses
• MFT graphs indicate lens quality

External factors
• Use as much light as is safe for subject
• Use or create a workflow for consistency
• Always include a color reference
Software

Adobe Photoshop
Standard software that is well known
Saves time and simplifies processing

Other options: Lightroom, CaptureOne, Adobe Photoshop Express (free), GIMP, ImageJ

RAW Processor – Raw Therapee

Consider computer capabilities
Lighting

LED
Halogen/Tungsten
Fluorescent

Continuous
Flash

LED lights Dracast and Profoto
Image: bhphotovideo.com

Tungsten Halogen Lowel
Image: bhphotovideo.com

Fluorescent - KinoFlo
Image: bhphotovideo.com

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**Lighting**

Color Rendering Index (CRI)

Ability of a light to reproduce color

Above 90 = Good Match

**Graphic of CRI**

Lighting

Color Rendering Index (CRI)

Ability of a light to reproduce color

Below 80 = Poor Match

Graphic of CRI

Lighting

Light shaping accessories

Softboxes
Reflectors
Barndoors

Profoto Softbox
Image: bhphotovideo.com

Profoto Barndoors
Image: bhphotovideo.com

Profoto Reflector
Image: bhphotovideo.com
Setting up a documentation space

Control light
• Reduce ambient light
• Diffuse lighting is best

Avoid colored backgrounds

Backgrounds
• Gray
• Black and white can work

Background materials
Painted
Photo-specific backdrops
Paper
Fome-cor
Formica
Setting up a documentation space

Stability
- Tripod or camera stand

Orientation
- 2D or 3D materials?

Quick and Dirty tips
- Parallel planes for 2D work
- 2 or more lights
- Flexible orientation
- Reduce reflections
2D Materials

Copystand

Camera

Lights

Normal Orientation

Subject

Flat paper
Small/flat objects
Shoots down
Normal light
2D Materials

Camera and subject are parallel

Copystand

Camera

Subject
2D Materials

Copystand

Barndoors

1 Light
Raking
Orientation

10°

Camera

Subject

Flat paper
Small/flat objects
Shoots down
Raking light
Raking and Normal Light

Capture appearance/information - Normal

Capture condition and texture - Raking
Copystand Light Options

- Lights on stands
- Ceiling mounted Softboxes

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Copystand Options

Camera attached to ball head fixed to bottom of central column of tripod, facing down

Image: www.bhphotovideo.com

Image: Cultural Heritage Imaging
2D Materials

Easel
2D Materials

Easel paintings
Framed works
Shoots toward wall/easel

Subject

20-25°

Camera

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3D Materials

Table
3D Materials

Object table
Shoot toward subject face on, or at angle
3D Materials
from above

Diffuse lighting from softbox
Variable lighting angles

Turntable can be used to capture all sides

Perspective shots (camera above subject and pointed down)
Seamless background
2D & 3D Materials

Variations
Images: Shakespeare Birthplace Trust
Object may need multiple angles depending on goals

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The camera automatically captures some data

- Date/time
- Camera make/model
- Exposure
- Resolution
- Color space
Metadata

User added metadata

- Creator
- Lighting and orientation
- Information about subject
- Filters or other special attributes about the setup
- Anything that will help you or another user repeat the setup or understand the image
- Options: use template, add to IPTC Core “Description” field
File formats and archiving

Ensure universal accessibility

RAW Files
- Canon .CR2
- Nikon .NEF
- Digital Negative .DNG

Archival file types
- TIFF
- DNG
- PDF

More accessible “archival”

JPEG is good for sharing, but images are compressed
Workflows

Provide consistency

Typical elements
- Set up
- Camera settings
  - white balance, ISO, exposure mode
- Capture
- Post-processing
- Filenaming
- Storage

Examples: resources
## Common issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color accuracy</td>
<td>Use imaging targets and color profiles, high CRI lamps</td>
</tr>
<tr>
<td>Exposure</td>
<td></td>
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<tr>
<td>Uneven lighting/shadows</td>
<td>Allow for flexibility in lighting and camera orientation, polarizers</td>
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<tr>
<td>Reflective surfaces</td>
<td></td>
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<tr>
<td>Oversize</td>
<td>Consider multiple images and lamps, move lights further back</td>
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<tr>
<td>Complex subjects</td>
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<tr>
<td>Filenaming</td>
<td>Establish protocol and process images as soon as possible</td>
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Poll

What is your biggest challenge in collections photography?
Final Thoughts

Prioritize purchases

Basic needs
- Camera
- Lighting
- Targets

Resources

AIC Guide to Digital Photography and Conservation Documentation
Ed. Jeffrey Warda
Suppliers

B&H Photo
www.bhphotovideo.com

X-rite
www.xrite.com

American Institute for Conservation
www.culturalheritage.org

Robin Myers Imaging
www.rmimaging.com

Image Science Associates
www.imagescienceassociates.com

Resources

Handout

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