GUIDELINES FOR PREPARING DIGITAL ART

Beginner Session

2009 ASPB Annual Meeting
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The Sheridan Group Journals

Topics
General Submission Guidelines for the following ASPB journals:
The Plant Cell
Plant Physiology
Including:
Imaging Foundations
RGB Image Submission and Color Management
Preparation Tips

Vector Images
Vector Images

- Vector graphics are made up of lines and curves called vectors.
- Created in drawing programs such as Illustrator, Freehand, CorelDraw, Word, PowerPoint.
- Vector graphics are resolution-independent.
- Fonts need to be embedded or converted to outlines or paths. Lines minimum of .25 pts.

Raster Images

- Raster images are made up of pixels.
- Created by capture devices such as digital cameras and processed in image editing programs such as Photoshop.
- Raster images are resolution dependent.
- Text and lines are raster elements and are not editable.
Resolution

72 ppi 300 ppi

Effective Resolution

- Actual resolution factored for scaling

50 picas (8.33 inches) @ 160 ppi 21.6 picas @ 370 ppi

Resampling
Line Art Images (Bitmap)

- Images comprised of black and white elements only
- 1000 ppi minimum resolution
- 1200 ppi preferred for thin line reproduction
**Halftone**
- Image only
- Grayscale or color
- 300 ppi minimum resolution

**Combination (Combo)**
- Halftone and line art combined
- Grayscale or color
- 600 ppi minimum resolution
- 1000 - 1200 ppi maximum
File formats

- TIFF – Tagged Image File Format
- EPS – Encapsulated PostScript
- JPEG – Joint Photographic Experts Group
- GIF – Graphics Interchange Format
- PDF – Portable Document Format
- MS OFFICE – DOC, PPT, XLS

Recommendations...

- TIFF
- EPS

Also acceptable, if prepared correctly:
- JPEG (compression)
- PDF (Distiller Settings)
- *Microsoft Office (Guidelines and settings)
Fonts and font embedding

- Use standard font families when labeling images and be consistent throughout your images
  - Helvetica or Arial
  - Times Roman
  - Symbol
  - Mathematical Pi
  - European Pi

Font embedding

- When submitting vector files either embed the fonts (when possible) or convert to outlines

Font embedding

- Adobe Illustrator
Font embedding
- Microsoft PowerPoint

File compression
- Lossless Compression
  - LZW, ZIP, CCITT G4
- Lossy Compression
  - JPEG

File compression
- Lossless techniques
- JPEG compression
RGB Submission

- RGB captures the original science
- Easier for authors
- Color managed conversion to CMYK
- Opportunity for full gamut RGB online
ICC Profiles

- Describe a device's ability to render color
- Necessary for accurate conversion to CMYK

ICC profiles

- Adobe
- Ricoh

Embedding ICC profiles

- Adobe Photoshop
- Adobe Illustrator
Preparation Tips...

Find balance of quality/size

IMAGE SIZE: 3” x 4” 600 ppi
- RGB EPS 24.7MB
- RGB TIFF with NO compression 8.9MB
- RGB TIFF with LZW 3.3MB
- RGB JPEG, Quality 8 354 KB

IMAGE SIZE: 3” x 4” 300 ppi
- RGB TIFF with LZW 1.6MB

Print quality digital photos
- Choose settings that maximize quality
- JPEG and RAW formats most common
- JPEG quality settings = compression
- RAW format is the new digital negative
- Capture in RAW, convert to TIFF
Print quality digital photos

Print quality digital photos

Canon EOS Rebel XTi

- Image Format
  JPEG, RAW (14-bit Canon original)

<table>
<thead>
<tr>
<th>Quality</th>
<th>File Size (Approx.)</th>
<th>Pixels Dimensions</th>
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<tbody>
<tr>
<td>Large/Fine</td>
<td>4.3MB</td>
<td>4272 x 2848</td>
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<tr>
<td>Large/Normal</td>
<td>2.2MB</td>
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<tr>
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<td>0.8MB</td>
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<tr>
<td>RAW</td>
<td>15.3 MB</td>
<td>4272 x 2848</td>
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</table>
Optical vs. Digital Zoom

Think bigger...

Alternate applications
- Adobe Photoshop Elements
- Web-based Image Editors (Picnik, PS Express)
- Open Source applications (Gimp)

*Just be aware of lack of color management support
Avoid Pattern Fills

- Do not use pattern or textured fills in graphics.
- Use solid fills or percentage screens.
- A 20\% difference in percent screens is most effective for differentiation.
Crop Excess White Space

- Use Adobe Photoshop’s Trim Feature

Online Preflight

http://dx.sheridan.com/

Presentation available at:

Site:
http://webftp.dartmouthjournals.com/ftp/ftplogin

Username: digexp
Password: 619exp
Presentation available at: