Creating Posters for Scientific Publications

The power of figures

Figure quality is a poster’s “Suit and Tie”

• Your figures reflect your overall effort in experimental design, technical execution, and attention to detail.

• "A picture is worth a thousand words"
Outline

• The Starting Materials
• Assembling your figures
• Making an Impact with Color

Primary Data Figures: Where to start?
High-quality figures start in the lab

Primary Data Figures
Master your Technique

James H. Nicholson, Nikon Small World Competition
Pixel-based files

- Two sub-types of Pixel-based files
  - Lossy
  - Lossless

Lossy file formats (compression)

- Example: Jpeg
- Highly simplified explanation:
  - The image is divided into tiles
  - The number of colors in each tile is simplified
  - How simplified depends on the “quality” setting chosen
  - These protocols are reapplied every time the files is saved

Lossy file formats (compression)

- Compression leads to a greatly reduced file size
- Fine for everyday use, not for primary data
- Once a compression is applied, it cannot be reversed
Lossless files

- Example: Tiff
  - Color of each pixel is recorded.
  - The color of each pixel will not change simply by saving.
  - The price of fidelity: file size.

Lossless versus Lossy files

Lossy file compression is even worse for line drawings and graphs.

Tiff | Jpg

LZW Lossless file compression

- Efficient storage, no information loss
- Highly simplified explanation: Replaces a pixel color with a short code throughout the whole the image
LZW Lossless file compression

Effective on images with a large number of colors

- 85 mm wide, 300 dpi
- Uncompressed Tiff: 2,710 KB
- LZW Compressed Tiff: 1,550 KB

Uncompressed Tiff:
85 mm wide, 300 dpi
Uncompressed Tiff: 25,200 KB (25.2 MB!)
LZW Compressed Tiff: 256 KB
Jpeg (with a high Quality setting): 586 KB

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AGU poster guidelines

- Suggested guidelines for the AGU Fall Meeting poster hall
  - Paragraph and figure captions: 24-point font (0.9 cm height)
  - Headers at least in a 36-point font (1.2 cm height)
  - Be creative by using different font sizes, styles, and colors.

Use the right visuals

- Comparisons
- Distribution
- Parts of a whole
- Trend over time
- Deviations
- Relationships

Labeling your Primary Data

- Make it easy to read your poster
- Make the legend “Supplemental Material”
Crafting Effective Graphs

Simplify Legends
Crafting Effective Graphs

Be Careful with Patterns

Don’t Hesitate to Try Something “New”

Moving Graphs Between Programs

• Graphs are Vector Objects
• Copy & Paste often works
• Save (or Export) as a vector file
  — Postscript file (Eps)
  — Pdf file
• Pixel-based file = A picture of a graph
**Editing your figures**

**Purchased software**
- Adobe Illustrator
- CorelDRAW
- Inkscape

**Free software**
- GIMP
- Inkscape

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**Illustrative Diagrams**

Use diagrams to reduce reviewer (and general reader) confusion

(Cejka & Plank et al., 2004)

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**Illustrative Diagrams**

Promote your research

(Could be You et al., 2014)
Saving the Figures

- Two Formats
  - Pixel-Based
    - Industry Standard: Tiff
    - Uneditable with a set resolution
  - General Guidelines:
    - Photos: 300 dpi
    - Photos with Lettering or Line-Art: 600 dpi
    - Line-Art (Graphs and diagrams): 1200 dpi
  - Vector-Based
    - Industry Standard: Eps (& Pdf)
    - Editable with “Infinite Resolution”

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How to use color effectively
Impact of color deficiency on figures

Normal vision

Dichromacy

AJE Figure Services

Figure Formatting

• Send us your figures, and our outstanding team will make them look great for publication

Custom Illustration

• Our team will create great figures from your data or a sketch

Send an e-mail to support@aje.com for a quote
Special thanks to Michele, Stacie, and Theresa!

Poster Preparation

• Send us your text and figures and our team will prepare a clear and attractive poster for your conference needs