Formatting Figures

Introduction

Ensuring that figures/images are properly formatted prior to journal submission saves time, effort (and money) for both SME and clients. Manuscripts that are submitted with improper formatting are often sent back to the author for revision, potentially weeks after the manuscript was first submitted. Image editing/manipulation can be a technically challenging task and requires a high level of attention to detail. Once you have finished editing the figures/images, it is helpful to double-check for errors. Watch for small, easily-overlooked requirements.

Note: This is not an exhaustive tutorial and some self-education may be required in order to become proficient with image editing software. Contact John Pederson (jpederson@supedit.com) for any questions regarding image editing or related software usage.

Getting started

1. Install GIMP. GIMP is a free and open-source image editing software for image manipulation and editing (https://www.gimp.org/). For the purposes of figure editing, you will not need to use all of the features available in GIMP. However, the most frequently used features are image cropping, resizing, changing resolution, saving in different formats to preserve quality, adding text/shapes, etc. They can be learned via online tutorials. Below are some links to helpful videos for getting started:

- Windows 10: https://www.youtube.com/watch?v=V1LvSC5GZdY&t=69s&ab_channel=ParkerPhotographic
- Mac: https://www.youtube.com/watch?v=OrCXp1MJLac&ab_channel=ParkerPhotogaphic
- Task-by-task tutorials for beginners:

https://www.youtube.com/watch?v=_wDDqs95TKY&list=PLqazFFzUAPc4vITMJaF3Fnqh3pccSMnC4&ab_channel=TJFREE

- General tutorial for beginners:

https://www.youtube.com/results?search_query=gimp+tutorial

Note: If you already have Photoshop and are experienced with image manipulation using the software, you may absolutely use it. However, SME does not currently pay for Photoshop/Adobe subscriptions. If you are currently paying for Photoshop, you may even want to learn GIMP to save money! GIMP is relatively easy to use and is quite similar to Photoshop.

3. Adjust your Microsoft PowerPoint settings to export images at high resolution of your choice. The following video tutorial demonstrates how to do this: https://www.youtube.com/watch?v=TEFJBeZmsCI&ab_channel=SlideCow The highest resolution supported by Microsoft 365 is 1000dpi. The flip-side to setting a 1000dpi resolution is the large file size of all exported images. In addition, not all journals require a 1000dpi resolution for all types of images. So once exported, it may be desirable to change the resolution in GIMP, Photoshop, or

Daniel's XL Toolbox. 4. Login to Lucidchart: Username: research@supedit.com Password: Litreview Note: Make sure you sign in with Google (see image below):

This is an excellent resource for making flowcharts and diagrams! There are many useful templates that are not provided in PowerPoint. However, you may choose PowerPoint for creating figures if preferred. 5. Download and save the PRISMA diagram template: http://prisma-statement.org/PRISMAStatement/FlowDiagram A PRISMA diagram should be included for all systematic reviews and meta-analyses. Some journals require PRISMA diagrams in this specific template, others may not require them so long as the flowchart provides necessary details. In general, it is easiest to use the template to create PRISMA flowcharts. 6. Before editing/formatting figures, it is a good idea to brush up on related technical concepts such as types of artwork, different file formats, image resolution, how resizing/changing resolution affects image quality etc. This will make it easier to understand journal guidelines.

Standard Operating Procedure

- Carefully read journal instructions before any photo editing task. Make sure to strictly adhere to all requirements noted in the journal's guidelines for authors. Note the following details:
- Required file format for different types of artwork
- Requirements for file naming
- Requirements for maximum file sizes (e.g., maximum of 50 MB per file)
- Required font styles
- Resolution for each type of artwork
- Recommended/required minimum/maximum image size
- Recommended/required minimum/maximum size of elements within images (e.g., minimum of 10pt Arial font at final image size)
- Color scheme (RGB, CMYK, Greyscale, etc.)
- Maximum number of panels allowed
- Preferred labeling scheme for panels (e.g., "left" and "right" specified in the figure legend with no labels in the image vs. "A" and "B" shown directly in the image)
- Maximum number of figures allowed in the main manuscript (if applicable)

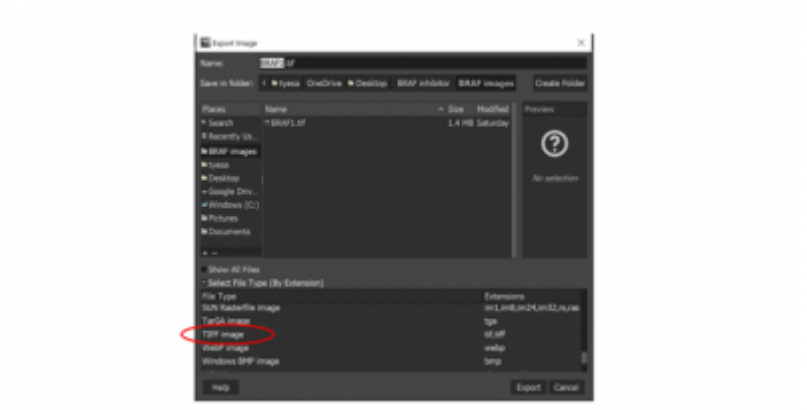
Method of submitting files

- Check that the files sent by the project manager are suitable for image editing and are the highest quality available; sometimes you may need more information or original high-resolution files. This step also helps with setting a time estimate/deadline.
- Save the original files and edited files separately and upload them to the relevant client folder in the SME Shared Projects Drive; they may be required later or for a resubmission. Within the client folder, create a subfolder labeled "Figures" to store figures.
- Enact basic journal requirements. Most editing tasks will require a combination of the tools and functions described in Section I.
- Generally make the figures look clean and with good aesthetic. For example, you may need to resize certain elements, change color scheme, remove wordy or extraneous bits, etc. Clarity (e.g., figure is completely readable in its final size and resolution) and consistency (e.g., same font styles are used throughout the figure) are your two best friends when it comes to proper

image editing.
- Always make sure that image quality did not get impaired when making adjustments. An easy/qualitative way to do this is by zooming in on specific elements and seeing if they are blurry compared to the original image at the same magnification.
- Always ensure that formatting does not interfere with image integrity/results that the image is portraying. This is especially important if changing the color scheme of the image.
- Double-check to make sure that all journal guidelines were followed and that the image is suitable for publication.
- Send the images with a description of changes to the project manager of the task.

Some additional points to remember

- Preferred format for image export/saving edited images is .tiff (unless otherwise specified).
- All images should be tightly cropped with minimal/no white space around them. This also helps to reduce file size. It can also help to create a transparent background if the image has a lot of nonessential white space (reduces file size and may help with other image editing procedures).
- For multipanel figures, whenever possible ensure that all images that make-up the panel are the same width and height. This can be easily achieved in photoshop/GIMP.
- Pay close attention to the charges for colored figures if applicable, some clients may have budget constraints. Inform the project manager about the color charges. If you are the project manager, inform the client about the color charges.
- Some journals also prefer black and white (greyscale) images unless color is absolutely necessary for that particular image.
- A sans-serif font such as Arial is generally preferred when embedding text in the image.
- Ensure consistent font type and size across images for the same manuscript/project.
- If using objects in the image (arrows, asterisks etc.) ensure that they are consistent in size and usage.
- Most journals will also require that any patient identifying information be hidden in images.
- When making PRISMA flowcharts, it is good practice to cross-check all numbers in the manuscript/excel sheet if they are available.
- You will also want to make sure that all figures are of high enough resolution, which is usually a minimum of 600 dpi. To check the resolution in Gimp, go to Image > Print Size.
- Many journals will want you to upload figures as .tiff files. To export as a .tiff file in Gimp, go to File > Export As > Select File Type By Extension.



Creating a .tiff image in Gimp.