Using guides in Photoshop to line up figure elements

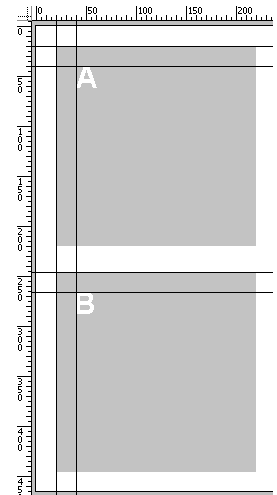Douglas Cromey, MS (SWEHSC Cellular Imaging Cores)

Guides are easy to use alignment tools that can be placed in images (or groupings of images, like a publication figure) to help with layout and alignment. The guides are only visible in PSD files when opened in Photoshop, they do not print and are not seen if the file is saved in another image format.

Alignment tools in Photoshop

See https://helpx.adobe.com/photoshop/using/grid-guides.html for more information.

- **Rulers** – make sure that VIEW | SHOW | RULERS is checked. Since this handout will be working with pixels, go to EDIT | PREFERENCES and choose pixels as the unit under "Units & Rulers".
- **Grids** – display as a graph paper-like background (users can define the grid line spacing in EDIT | PREFERENCES), can be set so that layer objects can "snap" to the grid.
- **Guides** – as described below, these are user-specified alignment lines and intersections that layer objects (images and text) can "snap" to the lines.
- **Smart Guides** – in more recent versions of Photoshop these tools (on by default) will attempt to help you line things up. Some may find this help useful, others may find it frustrating. To turn these off, go to VIEW | SHOW | SMART GUIDES.
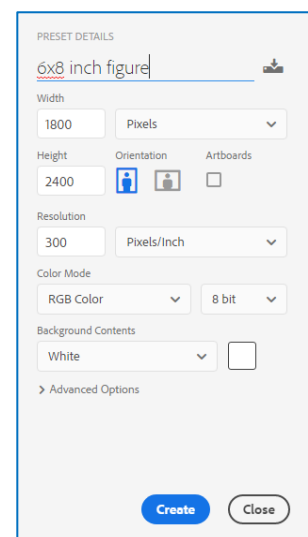

Guides are used to line up images and text overlays.

"Begin with the end in mind" [1]

When you are building a multi-image publication figure, you need to know in advance how much space you have to work with on the page. If the publication does not tell you this information in the instructions to authors, you may need to find a printed copy of the journal and carefully measure with a ruler. Take the measurement of the width of the outside edges of the text on the page (need to stay inside the margins), convert the inches from fractions to decimal places and multiply by 300dpi to get the total width in pixels (300dpi is the preferred resolution for bitmapped images). The height of the image is usually less crucial (unless the journal tells you otherwise), as long as the figure does not exceed the maximum height of an entire page.

When planning a publication figure you will need to consider ahead of time the number of images on the page, their placement, and how large the images need to be so that readers can appreciate the detail in the images. You have a finite amount of space (in pixels) to work with. You should include about 5-10 pixels (approximately 1-2 points) in width between each image for white space. This information (total figure size in pixels, the need to subtract a little space between images) will help you calculate what size the images need to be (in pixels) before you paste them into the figure. Please note: resizing an image will cause a loss of detail. This may be unavoidable, but plan to crop carefully and resize only once to avoid compounding the loss of detail by resizing multiple times. Use the Photoshop FILE | NEW command to create a blank image to create your figure (note you may want to make it slightly larger than you need, as you can use the guides to show the exact edges).

Setting up the blank slate for a figure using FILE | NEW

To use guides, ensure that the rulers are turned on (VIEW | RULERS). As mentioned above, the rulers should be showing pixels as a unit (EDIT | PREFERENCES). To most accurately place your guides, the figure should be displayed at 100%. There are two
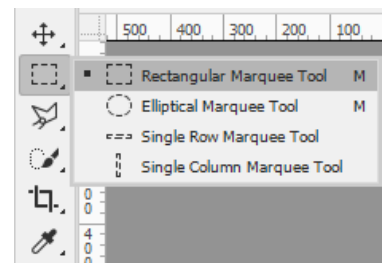
ways to place guides. The most accurate is to use VIEW | NEW GUIDE and type in the exact value for a horizontal or vertical guide that you want. The freehand way to create a guide is to place your mouse pointer over one of the rulers, then click and drag a guide out into the image. Guides can be moved around with the mouse using the ✥ tool. To determine the numerical location of a guide being moved in freehand mode make sure to have the Info window open (WINDOW | INFO). You can create as many guides on an image as you need. You can (and should) use guides to indicate the left, right, and top edges of the figure, the placement of the text labels, the white space between images, etc. You should also be using the "snap to" feature (VIEW | SNAP TO | GUIDES), so that your images and text will click right into the intersection of horizontal and vertical guides. More on guides from Adobe: https://helpx.adobe.com/photoshop/how-to/align-objects-guides.html

Before you resize your image data to paste into the figure, be sure that you are always working on a copy of the original image. Do any cropping before changing the image size. Please read the handout "Potentially the most dangerous dialog box in Adobe Photoshop" which talks about the dangers of the image size dialog box.

You can now paste your images into the figure, align those images to the guides (the images should "snap" into position), as well as add a scalebar *(if needed)*, and text overlays (labels). Once your figure is set up, you can crop it using the rectangular marquee tool. Draw a box around your figure *(if you set up guides on all four sides, you can crop right to the edge of the images because the selection box will "snap to" the guides)* and then choose the menu item IMAGE | CROP. To double check on the image size, go to the IMAGE | IMAGE SIZE to find out the final dimensions of your figure in pixels.

---

[1] Covey, S. R. (2004). *The 7 habits of highly effective people: Restoring the character ethic* ([Rev. ed.].). New York: Free Press.

From the UA Microscopy Alliance - http://microscopy.arizona.edu/learn/printable-materials