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PREPARING YOUR ART AND FIGURES

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Resolution and File Format

Please upload high resolution figures electronically to the Editorial Manager system when submitting your revised manuscripts. If you have trouble, please send email with the subject line "High resolution images for manuscript - D-XXXXX" where the X's are your manuscript number to spsaaas@spi-global.com and scienceadvanceseditorial@aaas.org .

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Resolution. Electronic figures should be sized to fit on single 8.5" × 11" sheets.For manuscripts in the revision stage, Grayscale and color artwork must have a minimum resolution of 400 dots per inch (dpi), and a higher resolution if possible.

Raster line art should be at least 600 dpi and, preferably, should have a resolution of 1200 dpi. Reducing or enlarging the dimensions of a digital raster image will also change its resolution. For example, reducing the dimensions of an image by 50%, with no change in file size, will double its dpi resolution; doubling the dimensions of the image will cut resolution by 50%.
Authors are encouraged to review past issues to gauge the approximate size their figures will take in page layout, and set the resolution of their figures accordingly. The maximum size of any figure should not exceed 40 MB

Format. Electronic figure files at the revision stage must be in one of the following formats: Adobe Portable Document Format (PDF), PostScript (PS), or Encapsulated PostScript (EPS) for illustrations or diagrams; Tagged Image File Format (TIFF), JPEG, PhotoShop (PSD), EPS, or PDF for photography or microscopy. Authors who have created their files using a drawing or painting program such as Macromedia Freehand, Adobe Illustrator, or Adobe Photoshop should export the files to one of these formats (preferably PDF).

*We cannot accept files in other formats; in particular, we **cannot** accept*:

- Microsoft PowerPoint files.
- Figures embedded in Microsoft Word files.
- Figures prepared in PowerPoint or Word formats that have been converted to other, acceptable formats such as PostScript or PDF.

Compressing files. For extremely large figure files (i.e., individual files greater than 10 megabytes in size), authors are encouraged to compress their files into .zip or .sea archives (using a program such as WinZip or Aladdin Stuffit) and send the zipped archives rather than the uncompressed files. Compressing figure files in this manner should result in a significantly faster upload of your files using our revision upload site. Please note that files should be compressed only for uploads of revised figures after peer review, not for uploads of new manuscripts before peer review.

Modification of figures. *Science Advances* does not allow certain electronic enhancements or manipulations of micrographs, gels, or other digital images. Figures assembled from multiple photographs or images must indicate the separate parts with lines between them.

Linear adjustment of contrast, brightness, or color must be applied to an entire image or plate equally. Nonlinear adjustments must be specified in the figure legend. Selective enhancement or alteration of one part of an image in not acceptable. In addition, *Science Advances* may ask authors of papers returned for revision to provide additional documentation of their primary data.

Science Advances Style in Figures

Figure layout and scaling

As suggested above, figures in *Science Advances* are commonly reduced to fit in 1, 1.5, or 2 columns in the print publication (1 column = 13.4 picas, 2.3 inches, or 5.8 cm). In some cases, the suggested size will be marked on the edited copy of the paper. If not, assume that we will try to make dimensions of the printed figure as small as possible. If one figure in particular is key, please indicate that it should be given some preference in sizing.

In laying out information in a figure, the objective is to maximize the space given to presentation of the data. Avoid wasted white space and clutter.

- Titles or labels not absolutely necessary for understanding the figure should be removed and explained in the caption.
- Keys to symbols, if needed, should be kept as simple as possible and be positioned so they do not needlessly enlarge the figure. Details can be put into the captions.
- Panels should be set close to each other, and common axis labels should not be repeated.
- Scales or axes should not extend beyond the range of the data plotted.
- Do not use minor tick marks in scales or grid lines. Avoid using y-axis labels on the right that repeat those on the left.

  Use solid symbols for plotting data if possible (unless data overlap or there are multiple symbols). Size symbols so that they will be distinguishable when the figure is reduced. Line widths should be legible upon reduction (minimum of 0.5 pt at the final reduced size).

Color-mix and contrast considerations

- Avoid using combinations of red and green together.
- Please do not use colors that are close in hue to identify different parts of a figure.
- Avoid using grayscale.
- Use white type and scale bars over darker areas of images.

Typefaces and labels Please observe the following guidelines for labels on graphs and figures:

- Use a sans-serif font whenever possible (we prefer Helvetica).
- Capitalize the first letter in a label only, not every word (and proper nouns, of course).
- Units should be included in parentheses. Use SI notation. If there is room, write out variables -- e.g., **Pressure (MPa)**, **Temperature (K)**.

- Variables are always set in *italics* or as plain Greek letters (e.g., *P*, *T*, m). The rest of the text in the figure should be plain or bold text.
- Type on top of color in a color figure should be in bold face. Avoid using color type.
- Use leading zeros on all decimals -- e.g., 0.3, 0.55 -- and only report significant digits.
  Use capital letters for part labels in multipart figures -- A, B, C, etc. These should be 9 pt and bold in the final figure. When possible, place part labels at the upper left-hand corner of each figure part; if a part is an image, set labels inside the perimeter so as not to waste space.

- Avoid subpart labels within a figure part; instead, maintain the established sequence of part labels [e.g., use A, B, C, D, E instead of A, B, C(a), C(b), C(c)]. If use of subpart labels is unavoidable, use lowercase letters (a, b, c). Use numbers (1, 2, 3) only to represent a time sequence of images.

- When reproducing images that include labels with illegible computer-generated type (e.g., units for scale bars), omit such labels and present the information in the legend instead.