Processing color figures: that was then, this is now

Where Do We Go From Here?

The last several years have seen drastic changes, as well as dramatic advances, in the world of scientific publishing. Technology and demand from users have methodically moved the journal publication program of the American Physiological Society (APS) toward a “digital pathway,” from online submission and peer review to publication.

As the APS Publications Department continues to implement more steps in this digital pathway, changes and improvements will continue to emerge. The latest step in this pathway is the APS movement to an RGB (red, green, blue) workflow for the processing of color figures.

Out with the Old

With the continuing shift from traditional print journals to online journals, APS will no longer require color images be submitted in CMYK (cyan, yellow, magenta, black) format. Under the previous CMYK workflow, we required authors to convert their RGB images to CMYK for print publication, only to have these images converted back to RGB for online proofing and publication. These conversions, back and forth, resulted in a considerable loss in image color quality and intensity. Vibrant blues, greens, and reds were most affected, because these are not fully represented in the CMYK color space (Fig. 1).

In with the New

Our digital pathway and online publication processes not only make it possible to implement an RGB workflow, they demand it. Online journal publication allows for the use of original RGB color images as captured by digital cameras and scanners and as seen in authors’ laboratories and presentations. RGB images will be preserved throughout the online publication process and displayed as the author intended. The RGB workflow allows for the preservation of fluorescent blues, greens, and reds (Fig. 2).

What about Print?

The printed journals must still follow the CMYK workflow. This will require that the last step in the process will be a conversion to CMYK for printing. This conversion will result in the same color shift in the printed journal from the original digital file that was experienced under the old workflow. The print quality should not suffer with this workflow change, and in many cases it will look much better, because the conversion will be done by the printer with much more sophisticated software than was being used by APS Art Editors.

How to Submit

Starting in July 2005, authors should submit all color images in RGB color space. The preferred formats are still EPS and TIFF. All images should be created at print quality and size. The minimum resolution for a raster image (TIFF format) is 300 pixels per inch (118 pixels per cm). For more information on the submission of accepted figures, please visit the Instructions for Preparing Your Manuscript page at http://www.the-aps.org/publications/i4a/prep_manuscript.htm.

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Fig. 1. Standard CMYK workflow. Author’s original RGB color image is converted to the CMYK color space for printing on large-format printing press, potentially altering the image’s color quality. The CMYK version is then converted back to the RGB color space for electronic proofing and online publication, which may further alter the quality of the image.

Fig. 2. New RGB workflow. Author’s original RGB color image remains in the RGB color space through the electronic proofing and online publication processes, thus retaining the author’s intentions and the image’s integrity. The RGB image is only converted to the CMYK color space for printing.