

◆ *Digital Art in Today's Publication Workflows*

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In 2000, successfully submitted digital art accounted for about 25% of submissions. The whole topic of "digital art" was still somewhat mysterious to most editors; they lacked core knowledge of the subject, and the limited software programs didn't help much. Some editors had to learn the hard way that simply resaving a 72-dpi image at 300-dpi wasn't a shortcut to enhancing image resolution.

Fast forward to 2005; successful submissions of digital art now approach 85%. Editors are better educated, and software, hardware, scientific applications, and production techniques have advanced. Preflight tools, such as DigitalExpert (The Sheridan Group, Hunt Valley, Maryland, dx.sheridan.com) and Rapid Inspector (Cadmus Professional Communications, Linthicum, Maryland, rapidinspector.cadmus.com/RapidInspector/docs/main.html), allow authors and editors to identify problematic submissions early in the process.

As publishers move from paper-based to digital workflows, improving production speed and improving quality are pri-

mary goals. However, editors face technical challenges with digital art submissions, including image resolution, file format, and file preparation; readable lettering and numbering; and RGB (red, green, blue) vs CMYK (cyan, magenta, yellow, black) color spaces.

Whenever possible, images should be submitted at 100% of their intended size, at the highest resolution available, and without excessive surrounding white space. A figure created in Photoshop (Adobe Systems Inc, San Jose, California) should be cropped to eliminate excessive

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surrounding white space, and the file saved in TIFF (tagged image file format). A figure created in Adobe Illustrator should be saved in EPS (encapsulated PostScript) format with all fonts embedded. Whether a graphic is vector or raster is also important. A vector graphic, which is created from mathematically calculated segments and arcs, is resolution-independent and therefore can be enlarged without loss of quality. A raster (bitmap) graphic, which is created from pixels, is resolution-dependent and cannot be enlarged without degradation. Line weights and types should be of adequate size in the final image. For example, line weight should be at least 1 point, and type should not be less than 5 or 6 points.

In an additive-color space, such as RGB, all colors mixed together create white. In a subtractive-color space, such as CMYK, all colors mixed together create black. The

RGB color space contains a wider range of colors than the CMYK color space; as a result, the RGB format is appropriate for electronic display, whereas the CMYK format is used for optimal print reproduction. Converting from RGB to CMYK can result in changes in color intensity and hue, so some publishers preserve RGB images for electronic display and convert graphics to CMYK for print. With various approaches to color management available, it is important to keep the end requirements in mind.

In a real-life example of digital-art submission, the American Academy of Family Physicians receives about 95% of incoming graphics in digital form. The academy produces three journals and some 3400 editorial pages each year. Some images are drawn by professional illustrators, and others are redrawn at the journal office, but many are supplied by the authors. As might be expected with author-supplied illustrations, concerns include copyright issues ("It's on the Web, so it's in the public domain, right?") and resolution issues ("It looked just fine on my screen.").

An end-to-end paperless workflow reduces manual processes, increases speed, and allows output to many different distribution channels before print production. The key elements of a paperless system are online submission, electronic peer review, copyediting with automated tools, and content management (for print, Web, CD, PDA, and so on). As with so many aspects of the editorial process, communication is crucial; all participants must know their responsibilities and how to use the tools available to them to fulfill their duties.

Perhaps in 2010, when digital-art submission is routine for all journals, CSE will offer a historical perspective on the editorial office of the past, focusing on that obsolete item known as hard-copy art. 🗑️