

Digitizing Figures: Workshop Report

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Selected Readings in Plastic Surgery

The Digitizing Figures workshop, held immediately before the CBE Airlie House Retreat, was both timely and informative. The material was presented by a publisher, an author, and a printer, who gave us their professional perspectives on author-supplied digital figures.

Leading the discussion was Michael Held, a publisher at a university press. Held recounted how some authors now insist on submitting computer-generated files of text copy and graphics. While textual characters pose no problem, in large part because of the ASCII standard, digital illustrations bring

with them an array of difficulties in their journey from the author's desk to the printed page. For a publisher, it means that the editorial staff must deal with technical issues such as file types, storage media, and output resolution. The publisher frequently acts as go-between for the author and printer, and effective communication is hampered by a lack of common terminology. If the printer cannot use the digital files as submitted, the publisher must rely on hard copy that may be of poor quality. Naturally, authors complain when their work is not reproduced faithfully, even if their original files were unusable. The result for publishers is interrupted workflow; delays in turnaround time because of errors, reshoots, and multiple

proofs; a challenge to their reputation; and, inevitably, increased costs of publication.

From the point of view of the author, digitized figures are a godsend, says Todd McGee, a postdoctoral student at Stanford University. Computers simplify enormously the task of illustrating a scientific paper. Whether the image is scanned from a photograph or x-ray film, captured by a confocal microscope or digital camera, or generated directly as a graph or line drawing, anyone who has a personal computer can create, crop, label, and revise figures. For the new generation of scientists with computer skills, the digital environment means greater flexibility, faster and easier production, and considerable money savings.

What about the printing of digital files? As Paul Bozuwa of Capital City Press told us, a properly prepared computer-generated image is rare indeed. Often the camera-ready figure suffers from inadequate resolution, deficiencies of the output device, colors outside the spectrum of the offset press, and tags (letters or arrows) in fonts not available to the printer. Moreover, digitization effectively shifts costs from the laboratory to the print shop. Digital files demand highly trained operators, a large array of peripherals for different media, sophisticated equipment and software for graphics manipulation, increased interaction with publisher and author, and longer production times.

The presenters suggested the following authors' guidelines for preparing digital files of artwork:

- Line drawing: Scan at 1000–1200 dpi and save the file in EPS format with fonts saved as an outline or path or as a TIFF file.
- Halftones: Scan at 300 dpi; set the tonal range at 2% to 96%; and save as a TIFF file.
- Combination: Import the halftone image (at 600 dpi) into Photoshop; crop and set the tonal range at 2% to 96%; export to a drawing program to create the labels; then remove the TIFF image layer; save the fonts as paths or outlines in EPS (600 dpi); open both the image and label files in Photoshop and combine; save as a TIFF file.

- Color: Produce a TIFF file at 300 dpi and save in CMYK format.
- All files should be able to be opened in Photoshop.
- Submit a hard copy suitable for reproduction which has been generated from the same version of the digital file. Store large files in Zip, Jaz, or Syquest media. Check with the compositor/printer to determine which media are acceptable.
- To compress large files, use a lossless utility like PKZIP or LHARC for PC systems or StuffIt or DiskDoubler for Macintosh systems.