

The Color Photographic Print

Technical Assignment

The nature of the color photographic print has changed dramatically in recent years. Color photographic prints produced with a chemical process are referred to as chromogenic prints and are processed with RA-4 chemistry. Print surfaces include glossy, matte, super-glossy, metallic as well as a backlit transparency (commonly referred to as a duratrans). In light-fading tests, these analog color printing materials have an estimated archival duration of nearly 70 years, depending on viewing / storage conditions while inkjet color materials can last nearly 100+ years.. There are considerable options when printing color digitally, whether it be with a continuous-tone printer such as a Lightjet or with an photographic-quality inkjet printer, including printer choices, choice of print materials or a combination of analog / digital processes.

Inkjet printers, both desktop and wide-format, provide the greatest flexibility in terms of printer types, inks, papers, sizes and third-party hardware and software. Inkjets use nozzles or print heads spray millions of tiny droplets of ink onto a media surface.

In utilizing the inkjet printing process, there are several important decisions that are necessary to consider including what the output size will be, print quality, inks, media, image permanence and cost. The initial decision that needs to be determined will be the output size desired, as this will dictate the size printer necessary, whether it is a desktop-type printer or a wide-format printer. As a general principle, the larger the output size then the larger the printer must be and consequently, the higher the cost. A desktop printer is considered anything that prints less than 24" wide. Wide-format printers typically utilize material on rolls and are capable of printing from 24" to 60" wide.

A printer's resolution, the number of colors used and the ink droplet size measure the print quality. The printing resolution, maximum dpi (dots per inch), determines the number of droplets produced in an image given dimensions. The difference between 1440 dpi and 4800 dpi is hardly noticeable to the eye in smaller-sized prints though utilizing higher printer resolutions is desired for larger-scale prints. The number of colors used will determine the subtle gradations of tone and description. The smaller the ink droplet size is, then the smoother the gradations of tone and the finer the detail will be in the print.

Most inkjet printers utilized two types of inks, dye and pigment, which will determine the permanence of the print. Dye-based inks were the first inkjet inks used and provide excellent image quality and a gloss that is usually more uniform than with pigments. However, dyes are more susceptible to light fading and being considered archival. Pigment inks provide greater light and image stability.

The digital color image can be printed on conventional color photographic print materials, commonly referred to as digital chromogenic prints or "digital c-prints," using continuous tone print writers such as the Durst Lambda or CSI Lightjet. Using three color-lasers (RGB) or light-emitting diodes (LED's), these printers produce extremely high-resolution prints that are similar to conventional prints processed in a normal wet chemistry manner though their cost makes it possible for only commercial labs to own.

Some important considerations in preparing for digital printmaking is the color space being used to optimize and print the image, color management within the monitor to printer workspace, and printer profiles. The color space is the environment in which the subjective nature of color is quantified, including the hue, saturation and brightness of color. There are a number of common color spaces from which to work in such as LAB, RGB, and CMYK. One of the important and distinguishing characteristics with each color space is the color gamut, which defines the entire range of possible colors possible in that system.

The LAB color space most closely represents how the human eye sees color and is the largest of the common color spaces. RGB is the most dominant color space for digital artists and is the default space for most digital cameras and scanners. It is the preferred color space for digital inkjet printing. There are several sub-varieties of RGB working spaces, including Adobe RGB (1998) and sRGB. Adobe RGB (1998) is the most commonly used of the default RGB color working spaces and covers the gamut range of common CMYK devices, including inkjet printers. sRGB is generally set-up as the default working space in Photoshop and other hardware/software settings, though it is mainly used for working with web images and not digital output. ProPhoto RGB provides a very large color space gamut that encompasses entire range of photographic materials. CMYK is the standard color space for the commercial printing industry.

Assignment

Using a color negative, print the same image in the Grossmont College Analog | Digital Photography Labs as follows:

In the color darkroom with a color enlarger, print processor and RA-4 photographic printing materials.

In the digital photography lab with the negative scanned, optimized and printed on a photo-quality inkjet printer.

Requirements

For the presentation (see Calendar for Due Date) and evaluation, please complete the following:

One (1) 8"x 10" analog color print and one (1) 8-1/2"x 11" digital color inkjet print of the same image made in the Grossmont College Analog | Digital Photography Labs.

Each print is required to be finished, but it is not necessary to mount. Turn-in prints for evaluation and feedback.