

LIGHTING LAB ACTIVITIES

A few years ago I went to the Broadway Lighting Master Classes in NY.

The thing I liked best was a little color demo with a white dress placed between two lights with color scrollers. The demo was to show that the less saturated color would appear to be "white." Watching what appeared to be "white" bounce from side to side as the same color got more saturated each time was fun. It is an amazingly interesting exercise. It is actually really easy to do yourself. If you look at the transmission spectra of different gel and then pick ones that are even close, it works like gangbusters.

Tell them about good old Roy G Biv. Draw a rainbow and hold it under different gels to see which colors look good or bad. One trick I always use is to do large line drawings on the same piece of poster board one in red paint and the other in green, be as clever as you like. Show it lit with a red gel then switch to a green gel. Always a great effect.

Unless I want to make a strong color statement, I use the same colors. Possibly even paler, such as L202 or 203. 'Bland' lighting is not a consequence of the colors used, but of where the luminaires are rigged, and how they are focused, and of the shadows they cast.

When I want to make a strong color statement, it is a different question. Magenta and green cross lights for a nightmare scene, or for a magic one. A single red pageant as a downlighter, focused very tightly. Mostly, my lighting is realistic, which is why I urge putative LDs to look at paintings, and at the world around them. When you are released from this constraint, do what you will, and know how to do.

Also, if you can find it, an old French film named La Kermesse Heroique, or Carnival in Flanders, which is set during the Spanish invasion of the Lowlands in the 17th century. It's in black-and-white, but they've done an incredible job of copying the lighting styles of Breughel, Rembrandt and some of their contemporaries, in some cases panning the camera past a composition from a famous painting.

Look at the movie, 'The Girl with the Pearl Earring'. The Designer wanted the film to resemble the paintings of Vermeer as much as possible, and the light that was available for Vermeer to actually have worked with.

I like the single source as it has a more immediate feedback to the student ("oh, look what blue does to that blouse!"), I have each student stand in front of the lights while I light them with various color combinations. My point is that combinations of additive and > subtractive color mixing often produce unpredictable results and lighting designers do the whole production a favor by taking the time to look at costume swatches in a light lab demonstrating how colors will interact. To his costume swatches, I would add some painted scenery swatches, and as wide array of skin-tone PEOPLE as I could muster, even to the point of inviting guests into the classroom for that lecture.

Each semester I lecture an hour on color mixing in my beginning lighting course. Teach your students how to cast shadows: how to simulate apparent light sources.

<http://www.d.umn.edu/~mharvey/th1501color.html> - The lecture concludes with a simple color mixing demonstration using three 3" fresnels, a small lighting console and the projection screen at the front of the class. Somewhere I read L164, L132 and L124 mixed very closely to white and I've been using those colors ever since.

I have the class of 18 students stand up and make a large circle around the perimeter of the room. Rotating clockwise, I have each student stand in front of the lights while I light them with various color combinations. My point is that combinations of additive and subtractive color mixing often produce unpredictable results and lighting designers do the whole production a favor by taking the time to look at costume swatches in a light lab demonstrating how colors will interact.

If I can announce it ahead of time, I challenge the class to wear clothes as bright and colorful as they dare. (Hawaiian shirts welcome!) Wide varieties of patterns and colors of fabric produce some amazing effects, but even without advanced warning, some surprising effects pop up with the clothes the students happen to be wearing that day.

Get some swatches of cloth from the costumers - larger ones that someone can drape around their body. Ones in strong primary colors, and muted tones. Interesting patterns as well, and at least one that is covered with sparklies. Have students go up and pose with these swatches in the various lights. Also have students with different skin colors up there and observe how different skin tones react differently. If you have a backlight in the lab, demonstrate this with someone who has an extravagant hairdo, and simulate a translucent dress with a swatch of gauzy stuff. Creative use of shadows is also fun. Silhouette with just a cyc wash.

Not really "Color Mixing" but another fun one is color saturation: Get the most rich blue light you possibly can on a white wall. Have your students cover one eye for five minutes while staring at the blue with the other eye. Then, get them to remove their hand and compare the colors that you see with each eye. They will be totally different!
Also good to remind oneself of this when lighting long dance pieces.

Another saturation trick.

Place a red gel in a light you can easily reach. Aim it at a white wall and have the class stare at it for a minute or more. The longer the better. Pull the gel out very quickly. You'll "see" a greenish flash before your brain adjusts back to the white wall.

I don't know if you have time, but I have a 4 x 10 flat painted in bands of ROYGBIV and a single band divided up into white and a couple of grays. I set this up and go through the various saturated pure hues of gels to show how light can effect the different colors. Having all of the colors in front of you really shows how each pigment color reacts. I do this with both a single instrument and then two instruments.

Mix three primaries on a white panel / cloth, insert a broom handle in the light path to create three shadows. Each shadow will be an additive compliment (cyan, magenta, amber).

I have done something similar for "Hands on workshops" involving younger kids. I aim three instruments a few feet apart and from a low angle, up at the cyc. I let the kids handle the lighting board to control the relative brightness and see how new colours can be created by mixing three primaries. Then I let the kids take turns standing centre stage and seeing their multiple enlarged shadows in various colours cast on the cyc.
