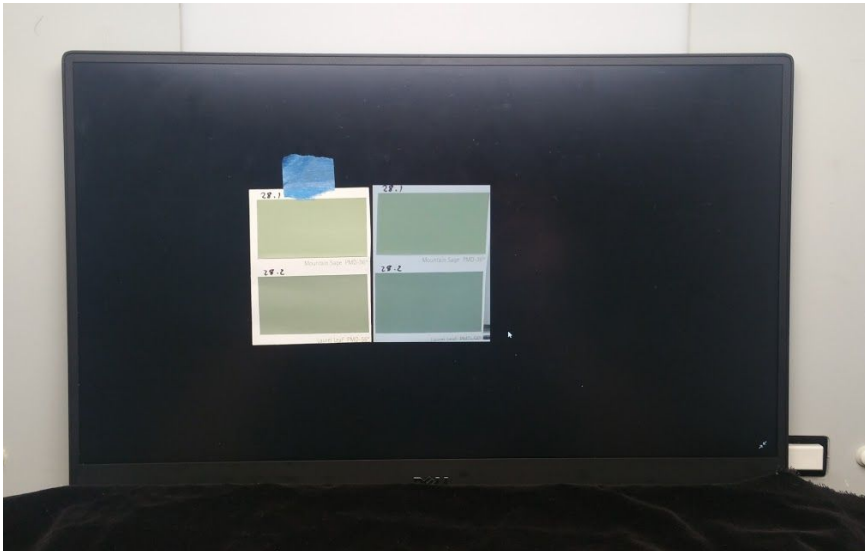
IMGS-351
Project 2 report
Team #: 13
Names: Molly Feldmann, Kevin Arnett
Date:

1) Insert the image of your real/imaged color patches in light booth from Project 1, step 4) here.



2) Insert the image of your real/matched color patches in light booth from Project 2, step 6) here.

3) Insert a listing of the MATLAB code a screenshot of the table you created Project 2, step 9) here.

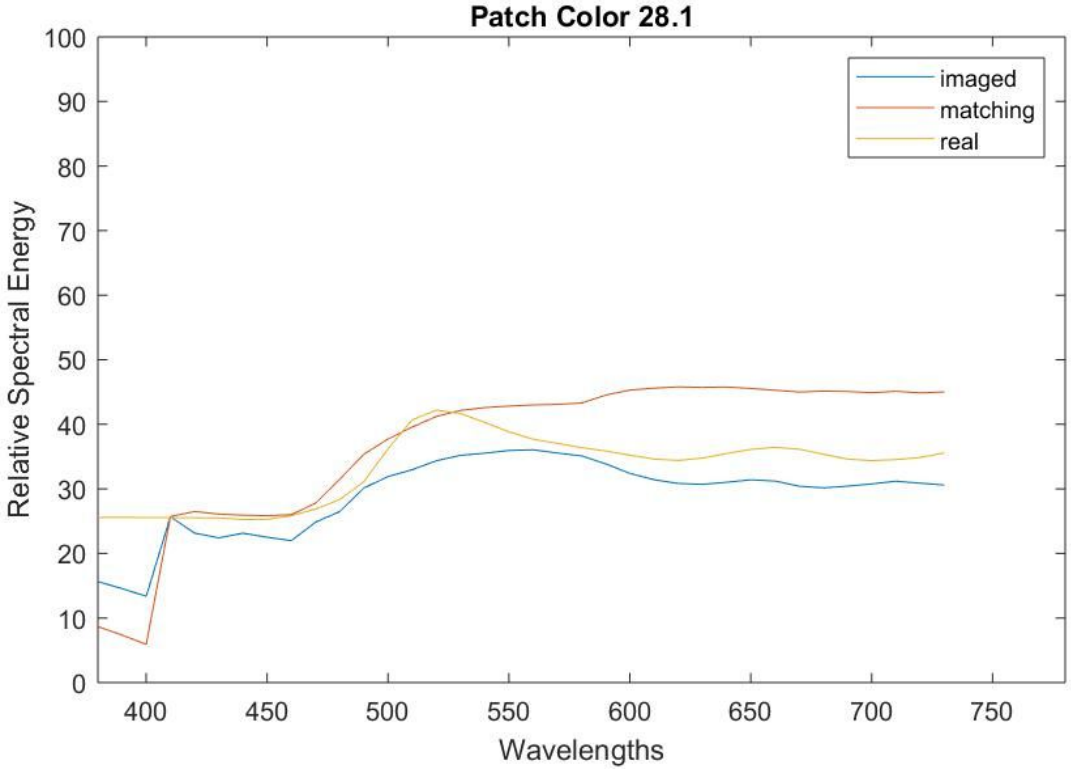
MATLAB Code

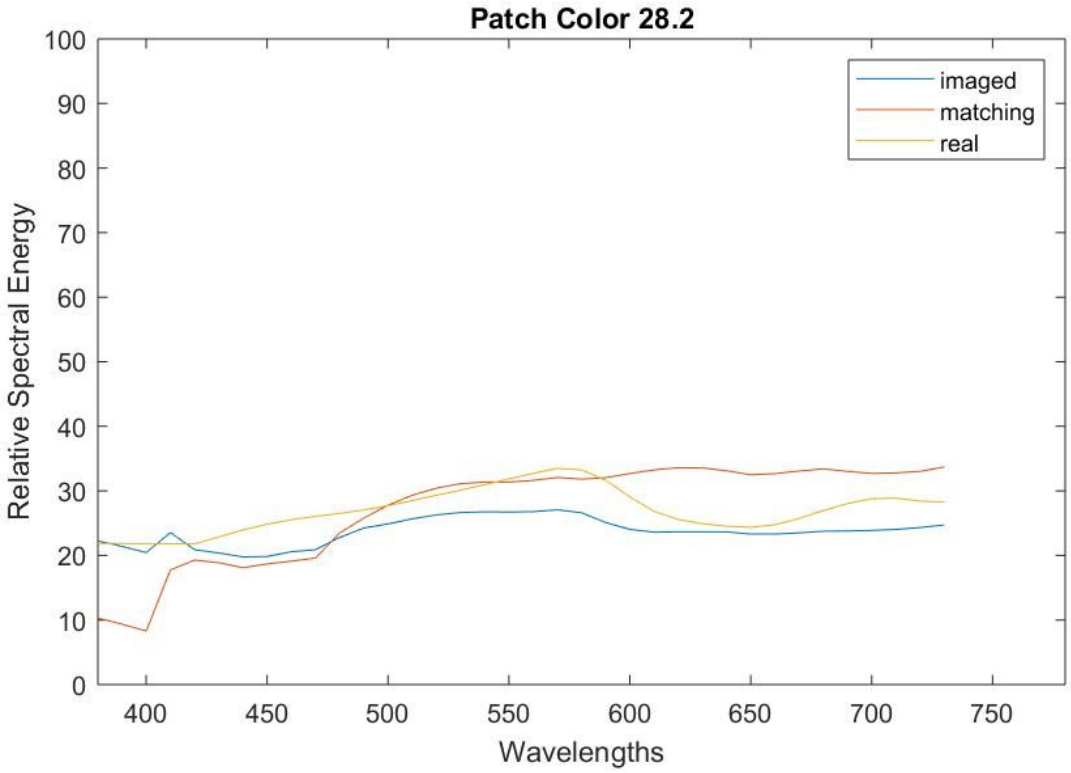
```
fprintf("Measured XYZ and Lab values\n\n");

fprintf("                    patch 28.1\n");
fprintf("          X      Y      Z      L      a      b\n");
fprintf("    real "); fprintf(" %.4f ", real(1, 2:7)); fprintf("\n");
fprintf("  imaged "); fprintf(" %.4f ", imaged(1, 2:7)); fprintf("\n");
fprintf("matching "); fprintf(" %.4f ", matching(1, 2:7)); fprintf("\n");

fprintf("\n");

fprintf("                    patch 28.2\n");
fprintf("          X      Y      Z      L      a      b\n");
fprintf("    real "); fprintf(" %.4f ", real(2, 2:7)); fprintf("\n");
fprintf("  imaged "); fprintf(" %.4f ", imaged(2, 2:7)); fprintf("\n");
fprintf("matching "); fprintf(" %.4f ", matching(2, 2:7)); fprintf("\n");
```

MATLAB Output

```
>> output_table
Measured XYZ and Lab values

                          patch 28.1
            X         Y         Z         L         a         b
    real  33.5105   37.4668   22.3492   67.6258   -8.9166   14.7679
  imaged  30.6663   33.8695   20.0319   64.8588   -7.2311   14.6344
matching  40.5269   42.5106   23.0918   71.2215   -1.4176   19.5498

                          patch 28.2
            X         Y         Z         L         a         b
    real  27.5838   30.1686   20.7248   61.7995   -5.8855   7.9372
  imaged  23.5066   25.6810   17.4180   57.7330   -5.4629   8.0307
matching  29.5487   31.1759   16.7052   62.6558   -1.9327   18.1654

>>
```

4) Insert the graphs of the patch spectral data you created in Project 2, Step 11) here.





5) Perform the following tasks and briefly address the following questions.

The CIELab values measured by the ColorMunki relate to the perceived lightness (L 0-100), redness/greenness (a +500/-500), and yellowness/blueness (b +200/-200) of your patches. Differences (Δ's) between patches indicate shifts in one attribute or another.

a) Take the CIELab values of your "real" patches as reference and calculate the ΔL, Δa, and Δb values of the corresponding "imaged" and "matching" patches (you should end up with data for four pairs). List or tabulate the differences for each pair below.

   a. Real/imaged 28.1 pair - $(\Delta L,\ \Delta a,\ \Delta b):\ 2.7670,\ -1.6855,\ 0.1335$

   b. Real/imaged 28.2 pair - $(\Delta L,\ \Delta a,\ \Delta b):\ 4.0665,\ -0.4226,\ -0.0935$

   c. Real/matching 28.1 pair - $(\Delta L,\ \Delta a,\ \Delta b):\ -3.5957,\ -7.4990,\ -4.7819$

   d. Real/matching 28.2 pair - $(\Delta L,\ \Delta a,\ \Delta b):\ -0.8563,\ -3.9528,\ -10.2282$

b) For each pair, describe the differences in color appearance that the Δ values indicate, and discuss how well the indicated differences agree with the differences you perceive.

   a. The ΔL, Δa, Δb values of real/imaged patch 28.1 pair indicate the real patch is lighter, more green, and more yellow than the imaged patch.

   b. The ΔL, Δa, Δb values of real/imaged patch 28.2 pair indicate the real patch is lighter, more green, and more blue than the imaged patch.

   c. The ΔL, Δa, Δb values of real/matching patch 28.1 pair indicate the real patch is darker, more green, and more blue than the matching patch.

   d. The ΔL, Δa, Δb values of real/matching patch 28.2 pair indicate the real patch is darker, more green, and more blue than the matching patch.

c) Briefly discuss a) any problems you had with the project, b) any parts of the project you thought were valuable, and c) any improvements you'd like to see.

   a. Colormunki program and device were finicky. We had to retest the screen (image and matching) several times because the program wasn't saving the information. The device's dial had to be changed between calibration and spotread a few times before the program picked up the calibration mode.

   b. We learned more about color matching by manual modifying the imaged patch so it more closely resembled the real patch. When reading through the data results and looking at the graphs, we know we made the changes to the

imaged patch too large as compared to the real patch, but we were certainly on the right track.

c. There were typos in the instructions, especially for filenames. It appeared that some were copy/pasted and then not updated. Also, are there any other tools besides colormunki for installing on our computers? It was tedious and now we don't know how to remove it from our machines.