**DEMO SCRIPT:**

* Preview window displays your current wallpaper pattern
* Pattern type:
  + In the first box you can select from the 17 wallpaper functions, which are named mathematically according to the…-0
  + Right now we are using a **Hex3** function which has 3-fold symmetry, but we can switch to **Hex6** to see a slightly different pattern, or **p4m**
  + This box also allows you to see small previews of each of the functions, in case you aren’t familiar with the crystallography notation of wallpaper function types
  + If I want to see the original color wheel with no wallpaper function applied to it, we can double click on the **original icon** (now we close this box)
  + Now we can select a new color wheel, such as **StCol**, the one most are probably used to, and apply our **p4m** function (as you can see the pattern is a bit blurrier
  + What’s really cool is that we can also choose to use an image as our color wheel. Let’s go select an image, for example this **Diplacus** flower (taken by Professor Farris in California), and switch back to **Hex3**
  + Now we can start playing around with adjusting the global scaling factors. We can adjust the global scaling radius and angle, which is global across all terms for the function (if we end up adding more in the future)
  + Since these are polar coordinates, we provide a graphical view for setting them. Let’s drag the point around and once we are satisfied, press OK to return to the main window. We can also adjust them from the editing box (change to **1.0 (r), 0.7 (a)**).
* Now let’s pause for a second. If we decide we kind of like the image we’ve created, we can **take a snapshot** to save it to our wallpaper history.
* Let’s look down at the Function Parameters box at the bottom of the window. Right now the function only has one term, but we can increase the number of terms to get some interesting results (increase from the box, to **3** **terms**). You can see some black colors there, implying that there is no corresponding color for the given pixel.
* Below you see the frequency pair (m, n) and the coefficient pair (r, a) for the term you are currently editing. The coefficient pair can also be set on a polar coordinate plane like we saw with the global scaling variables.
* Now, since it might be hard to keep track of all the terms at once, we can click the **View/Edit All Terms** button to see a table of all our function terms
* Change **term 2, M to 1** and see what happens – the preview display updates in real time. The original software will require you to manually update every time you make a change to the parameters. Now we adjust all terms together to make a nicely looking pattern:
  + **Term 1: m = 0, n = 1, a = 0, r = 1**
  + **Term 2: m = 1, n = 0, a = 0, r = 1**
  + **Term 3: m = 0, n = 1, a = 0, r = 0.6**
* We can also se if there’s a portion of the pattern we like better via Horizontal/vertical shift, and stretch the image via horizontal/vertical stretch. *DO NOT EDIT IN THE BOXES!*
  + **Horizontal Shift: -0.55**
  + **Vertical Shift: -0.5**
  + **Horizontal Stretch: 2.44**
  + **Vertical Stretch: 2.54**
* I can also press Reset to restore to the default settings at any time. I’ll **take a snapshot before resetting** so I don’t lose my masterpiece. Now I’ll try increasing **term 3, N to 5**. I’ll **snapshot** this too. Now we can restore to a preview snapshot we liked better.

Now if we’re really satisfied with our wallpaper, we can export our image. Let’s choose the standard prints size (6000 x 4800), and export it to a JPEG format and save it to the Desktop. Here’s our design!

If you want to try this software more, we will probably have another user testing in the next two weeks. If not, feel free to come by Searles 224 (Son’s home) anytime and we will be there ☺

So, let’s go back to our presentation.