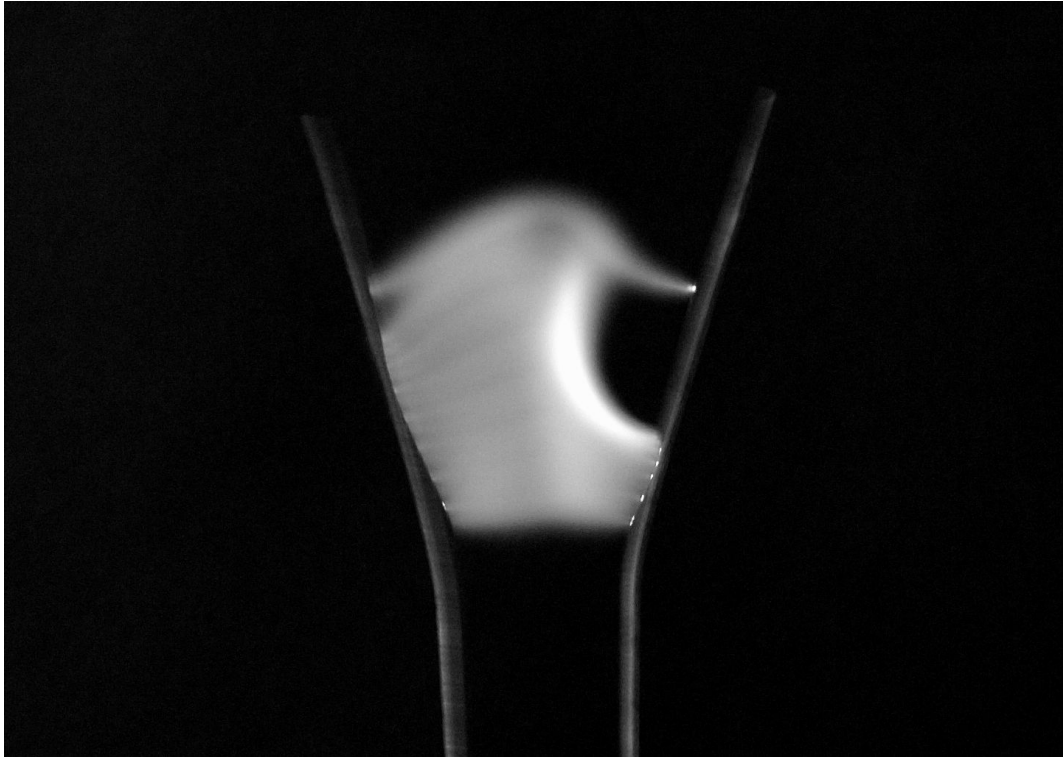Bradley Busek
Flow Vis
Group 8

Team Third Report

For our third group picture, we decided to go with something that is easy to set up, but could give a very interesting output. This would be a Jacob's Ladder which was at a Makerspace in Longmont. For this picture, we simply set the Jacob's Ladder on a stool (Greg set this up), and had a large black sheet of paper as the background. A Jacob's Ladder is something that has two large wire with a voltage differential. Because of the voltage differential, a spark will jump across from wire to wire. This is shown in the picture by the very bright parts on the wires. The spark (electrons) heat up the air around it, which will cause a decrease in density and cause the air to rise. This will pull the electrons upwards, which is why you see a spark rising in a Jacob's Ladder.

For this image I didn't want to take a quick picture that shows one spark, I wanted to show how it moved upwards. For this I set the shutter speed to 1/8s to allow for some movement upwards. I also set the aperture to f8.0, and the ISO to 400. While the electrons are bouncing back and forth, they are causing the wires to sway slightly, which is why this image (not accounting for the movement of the electrons) is not time resolved. As you look at the top of the

wires, where they move the most, you can see that they are fairly blurry and almost look twice as thick as the bottom section. I liked this image because I didn't quite understand it, and still don't. I can't explain why there is a section that is completely black (so there was so spark jump). I also really like this because to me it looks like a birds head.

Editing this picture mainly consisted of increasing the saturation of some colors, and making the darks darker, and the lights lighter. I also increased the contrast, however there was not a noticeable difference from this change. I also changed the color to black and white to try and get rid of some of the noticeable motion blur, which worked very well. The only actual color that was in the picture was from the wires, as they were slightly copper looking. I felt that this didn't actually add anything to the image so moving towards black and white felt like a very good option. If I were to do this I would try and use different types of colors, potentially by using laser pointers, instead of having it just black and white.