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Third Team Report

The purpose of this image was for one last time, at least in the context of this course, visualize fluid flow phenomena. The assignment is the third team assignment for the course. With the academic goals aside, I wanted to try something that was outside of my comfort zone in terms of fluid understanding. That said, the artistic and scientific intention of this image is to visualize sound waves through fluid. This image was realized with the undeniable assistance, both mentally and physically of Siobhan Sullivan, and Colin Greer.

The setup of the visualization was very simple. The fluid that was used to visualize the waves was that of 2 cups cornstarch, 1 cup water. The liquid, known not-so scientifically as oobleck, was then poured across a standard cookie sheet and integrated with 6 drops of green food coloring, to properly visualize the flow at the center of the frame. The cookie sheet was then placed on a 200 watt subwoofer, much to my neighbors' dismay. Here, Colin held down the tray so it didn't move too far from the bass flares of the subwoofer. The subwoofer was then rigged to play a test frequency through my iPod, beginning on low range frequencies climbing up to the higher ones. Many of the frequencies did not cause an interaction with the fluid, so we incrementally turned it to a higher frequency until there was an interaction that was visible. The visually represented frequency is that of 28hz. In addition to the subwoofer cookie tray set up, there is a white poster board placed behind the contraption in order to not cause a harsh light reflection on the surface of the fluid.

The forces acting on the fluid are rather evident, for the setup is simple. The sounds waves emitted by the subwoofer make the cookie sheet wobble at high speeds, making the fluid above mimic the waves themselves. In addition to this, the viscosity of the fluid causes it to “freeze” the waves as they are pushed further and further away from the sound source (the subwoofer).

The field of view encompasses half of the cookie sheet, so it is 7x8 in. The focal point is situated approximately 6 inches from the subject. The camera was used was a digital Canon EOS Rebel T3. The focal length of the lens is 55mm, and the image was taken with manual shutter control at an f5.6 and 1/60s shutter speed. The original image was 4272 x 2848 pixels, and the final image was actually not manipulated in any way. This is another goal that I wished to realize, for I wanted to create an image that I didn’t process at all, post-filmically. This was challenging for I had to perfectly tweak my exposure settings to make the image pop as much as possible, but ironically enough, this image was the first I took.

For final remarks, I am very proud of how the image turned out, as messy as it was to create, for I was able to honestly create an image that featured no post-filmic manipulations. It may not be the most complex of flow setups, but the concept of using sound waves as a manipulator and acting force was something that I personally was interested in and I very much like how this image rounds out the body of my work in this course.