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Flow Visualization

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I would be lying if my original plan was to have colored steam come from the dry ice and colored water used in the video. However, it was apparent from the start that this would not be the case. After seeing the setback, I decided to use the colors as a way to make the shifts between shots seem more exciting. The focal length was set to $f/5.6$ with the camera being about four feet from the cup. The ISO was set to 6400. This was most likely due to the fact that the lighting was darker than usual from cloud block and from filming by a wall's corner. More light needed to be added to give the water a more natural and fluid color; previous test shots with the ISO at 3200 and less did not give the colors an appropriate pop or flare.

The main reason Harlin James's *Time of Our Lives* was used was due to the fact that I had previously seen a fellow filmmaker use it in another montage of their own. I managed to find a youtuber by the name of *Bassed Tunes* who I contacted by Gmail; they granted me permission to use the song and convert it to an MP3, unfortunately, they told me that the electronic composer known as Harlin James no longer produces music that often and cannot be contacted. However, under fair use, the song can be used for the video's montage since it is not harping on the song's original message or being played in its entirety; nor am I taking monetization off of the song for promotion of my own video.

After each shot had been filmed, recorded, and cut down, I began to start editing. Due to Adobe now requiring a monthly subscription service for Premiere, After Effects, and Photoshop, I did not have the time or money to acquire a software to edit the sequences together, but

Windows Movie Maker is available as a free download especially since the computer I used to download it on is built with Windows. Windows Movie Maker proved to be a tiring and troublesome software program to edit on mainly due to the lack of a concise user interface as well as a small and tight space for the cursor to cut or copy tracks on the audio or video track. However, it provided more than enough support to get the visuals and audio to sync with one another and allow for the frame rate to be slowed down.

The slowed frame rate, which was reduced to just under one-half the original shutter speed of 60fps, was not originally going to be included. However, test sequences showed that even though Windows Movie Maker showed the liquid being poured at a less steady rate, once the file was saved from Movie Maker and converted into an MP4, the slowed frame rate would actually become a lot more smooth and crisp. Movie Maker's choppy test run of the footage may have come from the fact that my DSLR's settings were a little too advanced for Movie Maker's outdated editing system and test functionalities. Consequently, I am very glad I was able to experience seeing the fluidity of dry ice in motion and visualization with an actual camera. I had previously not known that dry ice would actually produce the steam and not the liquid it was inside instead. I look forward to the next project involving fluidity in motion; hopefully with better planning ahead of time.