Heliostat Apparatus/Solar Concentrator - Meeting #2 Update

This week I worked on three main goals:

1. Refining/upgrading the movement system
    a. Modified the bottom 3d printed universal joints to a new design that limits rotation of the system, since we only want it to move on the x and y-axis
    b. Designed a new motor mount/interface. Instead of using a belt it now uses a lever or hinged arm system with a joint which allows for more rigidity and more accurate control since you don't have to worry about tightening or adjusting the belt. It also can easily rotate in the other direction, making it easier to implement the two-axis movement in the future
2. Working on electronics
    a. Struggled a lot with wiring up and coding the Teensy microcontroller, TMC2130 stepper drivers, and stepper motors due to lack of documentation.
    b. Eventually decided to use a more complete all-in-one system from Adafruit which requires less complex wiring and has a well-documented library.
    c. Researched how the sun moves across the sky throughout the day and seasons to fully understand this as I write the code. Also found other heliostat code which I looked at as a resource.
3. Writing the abstract and revising from the feedback from Ye Tao - https://docs.google.com/document/d/1TSYQb57M0xd1b1AGwcwt1W-PonBZnRgldk3wnxsPhaM/edit

By the next meeting I hope to have the sun tracking code running and I am currently printing more mounts/parts to scale it up to 80 mirrors.