WORK COMPLETED

Since last class, I have received an email response back from Dr. Hallowell. She expressed that if our fiber optic circuit does not work, she would like to simply have a switch for a caregiver to give power to Stacey’s devices. Stacey is not likely to press switches easily or to speak clearly enough for a voice-activated system.

I went to the machine shop to work on several pieces. I got entirely new 12-inch pieces for the guiding beams, but they are still Aluminum 6061. I picked up a few spare pieces that would be suitable to size down to different cam configurations. I also cut the guiding beam ring in half, so it is of more suitable size for our project. Also, this allows for an extra piece in case we make a mistake on the first ring. Additionally, I discussed some options with Serge of what is the best way to attach plastic to aluminum pieces. He suggested that we either thread the aluminum piece and bolt it through the plastic piece, or to use some type of adhesive to attach the pieces together. This is something I still have to research a bit to decide the best way to proceed with the fabrication of the headpiece.
In the senior design lab, we checked in the other parts that came in and balanced our new budget. I also checked out the exact configuration of the inner speedometer cable underneath a microscope and found it to actually be a spring, and not threaded as I originally had thought. This means that when we attach anything to it, it either has to be attached with some setscrews or with some strong adhesive. This leads me to believe that the stuff on our speedometer cables may not actually be rust, but just some leftover adhesive gunk from when it was taken out of the car. We should still put some anti-rust chemical on it though, just to prevent this in the future. I also discovered that the spring would probably not be able to securely hold a cam. Sirisha and I determined we may need to attach a fixture directly off the spring that will hold an art utensil off of that. We went and discussed a few different options with Mr. Northrop that we will have to look a bit more into, and possibly discuss some options with Bill about. I also suggested that we might use a compass as this may add more stability to the set-up. I helped Nemi to test the torque power of the motor to ensure that it would properly rotate the speedometer spring and anything attached to it.

Figure 2: Inner Speedometer Spring

Figure 3: Testing of Motor
Also, I have been researching different ways to have the set-up to attach to the back of the wheelchair and what the best configuration is for the guiding beams to be placed on the headpiece. I also finished my portion of the Bioengineering Conference paper.

**FUTURE WORK**

By the end of this week, I will like to have made a final decision on the best ways to attach the headpiece components together to put these together. I also plan to send the Bioengineering Conference paper to Bill sometime on Monday so that he will have time to review it before submission. I am going to bring the speedometer cable to Mansfield Supply and see what size screws they would recommend for set screws. Also, Sirisha and I are going to discuss our new “cam” idea with Bill to double-check the mechanics behind it.

**PROJECT REVIEW**

As of right now, I feel that our team is still mainly on schedule. The hold-up that I foresee is how to get the speedometer cable through the gooseneck, and we have to make final decisions on this by the end of the week. The team researched different fiber-optic blink switch options, and has decided on which one to order on Monday. We also need to figure out if we need a longer speedometer cable for the 36-inch gooseneck.

**HOURS WORKED**

In Lab: 10
Outside of Lab: 2