

1/23/2019

Meeting 2 second semester

Time: 5:30-6:30

Executive Summary: the objective of this meeting is to assign individual tasks that will be completed by mid-semester. Schedule times will be discussed and decided for all members and more arm ideas will be discussed.

Status:

- From the last meeting, there has been no official updates. There have been some new ideas brought to light
- Doodle poll for mechanical members decided that Sundays are the official meeting days at 3-5pm for regular meetings and all-day Saturday for longer work meetings.
- For all members- meetings can be conducted Friday at 12 if we wish to meet with Dr. Winfrey

Assigned task:

- Felicity: cuff, lever attachment, and placement. Will overview all members for assistance and implementation of 3D prints. Experience will be incredibly helpful for making sure the arm is completed and efficient. Attachment points will need to be an important consideration.
- Antoinette: palm: needs to open and close to place motor. Band placement print in pieces? Preventing shear. Making the palm into parts would be the best approach. Open Bionics has made a similar model.
- Janelle: creation of fingers including sizing and thumb mobility: i.e. ball and socket. Resources include toe video for inspiration. Will make a shape for rubber bands for fingers
- Allison: Would like to work on forearm and mold for curvature. Will gather a physical understanding of shape and motor placement. Needs to consider the holes for wire placement. Reverence Biomechanics for inspiration.

Suggested Ideas:

- Molder holders- 3d print arm and thermoform around object of desired shape and holds pins in place
- Microcontroller-likely to be placed on cuff and five motors for each arm. Picture included.
- Servo motors will need to be added so budget will likely change to accommodate. Cost projection is unknown so far
- Need to design pulleys to add to the motors so a mathematical analysis will need to be created for torque and pulley strength. Ideally, the forearm will remain smaller.
- Collect Volcan gloves for low heat welding. Item may be added in budget or may be included in lab inventory for personal use.
- Lithium battery and a charging port and can attach the Arduino shield to the arm have all been confirmed as possible additions to the arm.
- PLA is still likely to be used but abs material will still be tested to see if it is a viable material.

Future Aspirations

- Will discuss action notes and plan in class
- Next meeting will be held on Sunday to start as a group and clarify any issues