

Thumb Wrestlers 9/14 Meeting Minutes

Attendees: Avery, Royal, Ryan, Dr. Perry, Vish, Dr. Wolbrecht

- Team introductions to Dr. Wolbrecht
- Asked Wolbrecht about budget needs for budget template:
 - o Dependent on other factors
 - o Fluid budget
 - o Narrow down target areas when budget is finalized
 - o \$5k to start
 - o Most expensive equipment is already purchased, mostly machining left
 - o Water jet base plate
 - o Bearings might be changed – can be expensive
 - o Carbon fiber prints – propose future prints
 - o \$600 - \$1500 per link for CNC machining
 - o Roll of PLA is \$30
 - o Carbon Fiber Spool \$450
 - o ONYX spool \$190
- Deliverables
 - o Send robot to California
 - o Have alpha prototype, need beta or completion this semester
 - o Version with improvements for expo
 - o Need a way to go from right to left easily – refine base plate
 - o Evaluate fit and function – how it feels
 - o Thumb cuffs
 - o Different hand sizes
 - o How to make it smaller without sacrificing performance
 - o Robot is in IRIC with Vish
 - o FEA analysis on new links
 - o Load testing on test pieces
 - o Machined end link connections to printed links
- Need to start collecting data from Vish and Steve Haner (?)
- Maybe start a Microsoft Teams
 - o Possible request from Ankit Gupta
- Avery can go to GJ machine orientation on Thursday
- Nick Butler – Geometry reinforced MIT research
- Materials used links from Dr. Perry
 - o <https://markforged.com/product/onyx-filament/>
 - o <https://markforged.com/materials/continuous-fibers/continuous-carbon-fiber>
 - o <https://www.amazon.com/Sindoh-Filament-Compatible-millimeters-Diameter/dp/B01HD9A8GG#ace-g6796040015>
- Dr. Wolbrecht: 4:30-5 on Thursdays
- Everyone discussed and volunteered for specific tasks associated with the project
 - o Avery – team documentation
 - o Royal – Client contact and meeting organization/agenda

- Ryan – Budget
- Once common drive is established, everyone will help with documentation and editing budget as necessary
- Decided on evaluating fit and function as well as moving from left to right