

## Printer Progress

Weekly Report 3/26/17 to 4/1/17

Throughout this week I worked diligently on my final product as more and more parts began arriving from China which I assembled onto my 3D printer. I was able to install many of the major components such as the stepper motors which allow for the movement of the belts which control the movement of the printer, the heatbed which would be the actual print surface the printer deposits plastic onto, and the hotend assembly which is the actual part which extrudes the plastic. The hotend assembly included the 3D printer nozzle and heatsink, fans for part cooling, a stepper motor for extruding filament, and a sensor for auto bed leveling. During the week I also managed to install the power supply in its proper location as well as begin wiring the electronics with wires from the motors, hotend, and the heatbed. I also printed an enclosure in order to house the electronics which included the RAMPs control shield, and the Arduino Mega control board which the RAMPs board fit into. When wiring the electronics, I made sure to make as many safety precautions as possible, being extra careful as to use crimp ring terminal connectors on the wires to the power supply to prevent any possible contact with mains voltage as well as using an enclosure around the terminals of the power supply to prevent inadvertent contact. During the week I also managed to do some more research on my topic of building a 3D printer with the history of the RepRap which actually provided some insight into the process which came about for creating the RepRap principle which I actually applied in my own final product 3D printer design with the inclusion of several 3D printed parts. Throughout the week I felt that I made great leaps in progress on my 3D printer and hope to finish the printer as soon as all my parts arrive. Despite the slow shipping times, I still believe that I can keep myself on

schedule by working ahead in other parts of my project such as the CAD modeling and part design which will allow me to adhere to the calendar I set for myself. In the coming weeks I hope to meet with my mentor to update him on my progress as well as ask for assistance should problems arise during testing.