sdmay18-05: 3D Metal Printer

Week 3 Report
September 17 - September 23

Team Members

Jett Ptacek — *Team Member*
Rachel Shannon — *Team Member*
Ben Pieper — *Team Member*
Caleb Toney — *Team Member*
Kevin Oran — *Team Member*

Summary of Progress this Report

In this past week we did a lot of research to decide whether to use a stepper motor system or a mirror system for laser guidance. We discovered that interferometers have a very precise beam length. We need an interferometer for the NDE portion of the project. Since a mirror system would require a variable beam length, we determined we have to use a stepper motor system. A stepper motor system means our speed is pretty limited. Since speed isn't a part of our scope, this is a minor issue. We also worked further on the exterior enclosure design and did research on areas such as thermal cameras, enclosure material, and Velmex controllers. We also got a chance to see the 3D printer in design.

Pending Issues

We are still waiting on a company to give us a quote and specs for the laser heads and for the enclosure around it. With that information we will be able to finalize design and move forward with parts acquisition.

Plans for Upcoming Reporting Period

We are going to finalize design plans and begin parts acquisition. With a goal of having it put together by the end of the semester, we need to start moving forward.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jett Ptacek	Researched Velmex products	6	16
Rachel Shannon	Set up visual board for parts	6	16
Ben Pieper	Researched motor controllers and set up the website	6	17
Caleb Toney	Wrote report and researched mirror system	6	16
Kevin Oran	Researched interferometers for mirror system and worked on volume calculations of enclosure	6	20
