The Honors Enrichment Award was a huge help in allowing me to pursue learning about mechatronics systems that otherwise would have been outside of my budget. I received the Honors Enrichment Award for a project related to the course MECH 307, a class where students undertake a project that involves mechatronic systems. The project that my group and I decided to pursue was a Computer Numerically Controlled (CNC) laser engraver. Some components that the grant helped subsidize the cost of were the laser, an arduino gShield, multiple types of arduinos, and steel rod for the low-tolerance frame, as well as wires and other necessary but often forgotten components.

Specific skills that I was enabled to learn from this grant include: arduino programming, component soldering, laser controller interfacing, G-code programming, arduino serial communication, PICC Basic programming, milling fundamentals, tight tolerance manufacturing techniques, laser safety protocols and necessary safety equipment, LCD programming methods, hardware-software interfacing, and rapid circuit prototyping.

Included is the report explaining how the CNC laser cutter worked, and how it was manufactured. All of this was made possible through the Honors Enrichment Award.