Work Completed:

Over the past week the vertical shafts and actuator bracket were welded into the device. Using the lathed rods Jackie made, I aligned them into the frame of the easel and welded these components together. One of the unique parts of our easel is the way in which the channel piece supporting the horizontal movement glides along these rods. Two 2” long pieces of ¾” square tubing were welded to the back of the channel piece. The circular rods glide inside these square tubing pieces. Although it may seem that this is a silly and unprofessional concept (putting a round peg in a square hole) the basis for this design is to reduce friction and maintain support. Pictures of these parts being welded can be seen below.
The bracket to house the actuator responsible for vertical motion was also fabricated. The 2” channel pieces fit nicely over the base of the actuator. A small hole was notched to allow the small protrusion of the actuator to fit below the bracket, and will be locked into place using a cotter pin.

Also completed the past week was the attachment of the screw drive to the tracking system. This was an extremely delicate and complicated task to align these two parts perfectly. A bracket was made to house the plastic flange that rides along the screw drive. This was welded to a plate that is bolted to the 80/20 slider. The screw dives end pieces were welded to aluminum tracking brackets to the ends of the 80/20 track as well.

Lastly, pieces were cut for the easel face itself. This will be put together from \( \frac{1}{2} \) 80/20 tracking and thin pieces of aluminum angle. It will be bolted, not welded together so that it is possible to be size manipulative to support different types of canvas’s for the artist.
Future Work:

The next week will require us to clean many of the new welds and file down some of the imperfections in the metal caused by welding. The vertical movement does not glide as smoothly as we would like, so a lot of time needs to be spent sanding down the rods as well. Boxes still need to be made for the gear motor, circuitry, and joystick. Finally, the easel needs to be painted and integrated with the circuitry. The project should be completed within the next week or two.

Project Review:

With close to all the welding and fabrication completed on the device, I am happy to see movements working, actuators functioning properly, and perfect collapsing abilities still performing great. We are still awaiting the arrival of some parts, however, that will delay the final completion of the device. These parts include the power source, and 80/20 sliders and clamps.

Hours Worked:

Over the last week I spent roughly 14 hours welding, fabricating, searching for parts, cleaning previous welds, and designing brackets for the actuator and plastic flange.