Work Completed

Since the last report, we have received several parts that were ordered from DigiKey, but we are still waiting for the BNC cable and the Force transducer. Therefore we will be using a breadboard while we get all the components to build the PCB board. There were changes and updates made to the muscle recorder enclosure. First change made was the addition of a separate box that will be used as the pump reservoir. This change was made because of two reasons. The first reason is that this change allows us to prevent spillage of saline solution everywhere, and at the same time it is easy to be removed for cleaning of it. The second reason is that when the enclosure was built, we did not test it for the leaking of fluids in the sides, additionally there was no front to the box since the front would basically be the enclosure door. The dimension of the box is approximately of 10 inches x 7 ¼ inches x 5 inches and there will be fluid coming out of it. Another change in the box is that we moved the lever toward the front. This was done in order to leave enough space behind it to place the PCB board. The PCB board will be placed in a small shelf or enclosure that will be protecting the board from moisture reaching the components with the pump. Even though the pump should be directed in the opposite way the PCB board is, we wanted to make this change just to be sure and protect all the components. The dimensions are not yet known since we do not know how big the PCB board will be. Instead we will have a temporary arm holding the sensor. We added a shelf on top of the lever to add extra space for any circuitry or cables inside the box. This shelf has a diagonal cut in the corner of it to let cables coming from the PCB board to rest in the shelf. In the back of the enclosure close to this shelf a hole was drilled to let the cables go out or come in from the computer. Extra holes might be necessary but we will wait few more days until all components get here. Additionally, we cut another shelf that will be used as a support to attach the muscle once it is placed on the force transducer. It is glued on the lower right side of the enclosure and it is right on top of the reservoir. The shelf will have
small drilled holes that will serve as the way to attach the nylon to the hook holding the muscle. The pump will be refreshing the muscle and fluid can easily drain down the small holes (not show in the diagram). The next picture shows all the new or additional components all included into the muscle recorder enclosure.

The other change that will be introduced to the enclosure is the way it will be closed. Initially our design was to build a door that was going to be held on the right side of the enclosure. Since this piece was going to be 12 inches x 24 inches, we thought it would be heavy enough as to create too much weight on the hinges holding the single door. Instead I wanted to cut two pieces of plexiglass measuring 6 inches x 24 inches to reduce the stress on the sides of the box. The doors will be attached in the sides by hinges and screws. A pin lock will hold the two doors from opening by themselves. The pictures below will show the original design of one door as well as the new design with the two doors.
Future Work

Once the force transducer arrives then measurements for the muscle force will be taken. Also with all the components we will be able to build the PCB board. Change the ac pump for the dc pump once it gets here.

Project Review

We have not been able to meet all of our goals since we are still waiting for few parts. Once the parts arrive we should be able to finish the project and test to obtain the relationships.

Hours Worked

14