

Development of an ultrasound probe holder for arterial function testing (Probe Holder)

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Team: Leon Corbeille (BWIG)

Neal Haas (Communicator)

Peter Kleinschmidt (Leader)

Lein Ma (BSAC)

Progress Report for Week 13: April 24 – April 30

Problem Statement:

To aid in the ultrasonography of arterial reactivity, a simple, stable, adjustable probe holder is needed. The stabilization provided by such a holder could potentially improve probe imaging quality and diagnostic effectiveness. The device should be able to be finely adjusted with 6 degrees of freedom, and free the hands of the technician for the duration of the study.

Last Week's Goals:

- Obtain remaining parts and finish assembly. Test performance of device
- Create poster for final design presentation. Rehearse presentation for May 1st.

Summary of Accomplishments

- Completed poster for presentation May 1st. Rehearsed as a team.
- Improved magnetic attachment to the device by obtaining a piece of 1/8" thick Low Carbon Steel. Machined the sheet stock to fit the device, filed and sanded then polished for appearance. Sheet may be subject to tarnishing in the future, but a solution will need to be identified later.
- In attempting to locate the clamp ordered 1 month ago, we found that the supplier we contacted mishandled our order. As a result, we were forced to identify another source who would be able to ship us an equivalent clamp by our Friday deadline.
 - A new part was ordered from Fischer Scientific. However, delivery instructions were incorrect and the part has not yet arrived. It is expected to arrive Friday morning.
 - The clamp requires a minimal amount of modification to be compatible with the device. (The diameter of the mounting rod must be reduced by 1/16"). We hope to be able to accomplish this Friday morning by using a coarse sand paper. We do not know how difficult it will be to sand this down, but are still optimistic for having the complete prototype for presentation Friday afternoon.

This Week's Goals

- Write final design report.
- If clamp does not arrive in time, spend next week making necessary modifications to have the prototype ready for delivery as soon as possible.

Project Difficulties:

See accomplishments section above for troubles with obtaining the clamp for the probe.

Team Activities

Members	Activity	Time Spent	Total
Team	Construction, Poster Preparation and Rehearsing	8.00 hr.	31.00 hr.
Lein	BSAC Meeting, Report/Poster work	1.50	21.00 hr.
Leon	Contacting Suppliers	0.50 hr.	22.50 hr.
Peter	Contacting Suppliers, obtaining materials, Progress Report	1.59	22.50 hr.
Neal	Communication, Poster work	1.0	20.75 hr.

Project Timeline

Task	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8
Project Development																
Brainstorm/Design Development																
Finalize Design																
Prototyping																
Deliverables																
Progress Reports																
Mid-semester Paper																
Mid-semester Presentation																
Final Paper																
Final Poster																
Meetings																
Client																
Advisor																
Website																

Budget/Expenses – Updated April 2, 2009

Item	Product No.	Supplier	Cost
4x2 PVC Pipe*	611942112760	Home Depot	5.74
Sheet Metal (1'x1')	43374560329	Home Depot	5.84
Emory Paper	76607478559	Home Depot	5.47
23 3/4 x 48 Melamine	40933106189	Home Depot	11.98
1x4x2 Poplar	10286399428	Home Depot	2.63
Positioning Arm	9560384	MSC-Direct	193.81
Sales Tax			1.61
Total			227.08

*To be returned, size won't work