

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

**Client:** James H. Stein, MD  
Dept. of Medicine, Cardiology  
UW School of Medicine and Public Health  
Phone: 263-5131  
email: jhs@medicine.wisc.edu

**Team:** Leon Corbeille (BWIG)  
Neal Haas (Communicator)  
Peter Kleinschmidt (Leader)  
Lein Ma (BSAC)

### **Progress Report for Week 10: April 3 – April 9**

#### **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:**

- Construction: Cut base to size, attach metal mounting plate, begin sizing mounts for arm cradle.
- If possible: cut tubing to arm cradle specifications. Begin foam forming and attachment.
  - Pending arrival of supplies
- Specify modifications to clamp (Outer Diameter of the clamp must be reduced to be accommodated by the positioning arm).

#### **Summary of Accomplishments**

- Construction is near completion. Only waiting on obtaining the clamp to mount a probe.

#### **This Week's Goals**

- Obtain clamp and get full device assembled.
- Deliver device for preliminary testing
- Begin preparation of poster and paper for final presentation

#### **Project Difficulties:**

None

### Team Activities

Members	Activity	Time Spent	Total
Team	(Individualized Below)		22.00 hr
Lein	Planning, Construction, Distinguished Entrepreneur Lecture	4.50 hr.	19.00 hr
Leon	Planning, Construction, Distinguished Entrepreneur Lecture, Shop Training	5.50 hr.	21.50 hr.
Peter	Planning, Construction, Distinguished Entrepreneur Lecture, Shop Training	4.50 hr.	20.50 hr.
Neal	Planning, Construction, Distinguished Entrepreneur Lecture, Shop Training	5.50 hr.	19.25 hr.

### Project Timeline

Task	Jan.		February				March				April				May	
	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8
<b>Project Development</b>																
Brainstorm/Design Development																
Finalize Design																
Prototyping																
<b>Deliverables</b>																
Progress Reports																
Mid-semester Paper																
Mid-semester Presentation																
Final Paper																
Final Poster																
<b>Meetings</b>																
Client																
Advisor																
<b>Website</b>																

### 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
<b>Total</b>			<b>227.08</b>

\*To be returned, size won't work