

**BME 402 - Heart Phantom**  
*Progress Report Week 6 – 2/28/09 to 3/06/09*

*Team Members:*

Jessica Hause (Co-Team Leader)  
Erin Main (Co-Team Leader)  
Lacey Halfen (Communicator)  
Peter Strohm (BSAC)  
Fan Wu (BWIG)

*Client:*

Orhan Unal

*Advisor:*

Willis Tompkins

**Problem Statement:**

This project consists of designing a heart phantom to be used for the initial testing of a new, solenoid-tipped catheter awaiting FDA approval. This catheter will ultimately be used to treat atrial fibrillation under MRI guidance. The transparent phantom will be used to test the maneuverability of the catheter under MRI guidance as well as the high resolution imaging capabilities in the vicinity of the solenoid tip. It will consist of clear tubing of various sizes representing tortuous vasculature leading to a single heart chamber. All “veins” must terminate at one end of the phantom and be sealed so they may be filled with a saline solution in either a static or dynamic state without risk of leaking.

**Goals last Week:**

- Finish construction of phantom (interconnections of tubing, pump connections)
- Powerpoint for mid-semester presentations
- Leak testing for casing and tubing connections
- Flow testing

**Summary of Accomplishments:**

- Ordered new o-rings and nuts for heart
- Finished preliminary construction of phantom
- Created high resolution block for phantom
- Purchased and implemented new parts
- Created powerpoint for mid-semester presentation
- Leak tested the heart

**Goals this Week:**

- Order thicker tubing
- Test out flexible tubing directly into heart
- Seal casing and connections
- Leak test casing and tubing connections
- Flow testing

**Project Difficulties:**

- We discovered this week that our tubing is too flexible and as a result, it is kinking within the casing. New tubing will need to be ordered in the coming week.

**Activities:**

Date	Person	Activity	Time Spent
3/01/09	Peter, Lacey, Jess, Erin	Created slides for power point	1 hr
3/01/09	Erin	Put together power point	2 hrs
3/04/09	Team	Edited power point, went over speeches	1 hr
3/05/09	Jess, Peter, Lacey	Created high resolution block, cut and pieced together tubing and manifold connections	2 hrs

**Team Hours:**

Weekly..... 6 hrs  
 Total..... 42.25 hrs

**Project Timeline:**

Jan. 18 - Jan.24	Project Selection	x
	Contact Client	x
Jan. 25 - Jan. 31	Individual Research	x
	Client Meeting	x
	Brainstorm	x
	PDS	x
Feb. 1 - Feb. 7	Finalize Design	x
	Order Parts	x
Feb. 8 - Feb. 14	Construction	x
Feb. 15 - Feb. 21	Construction	x
Feb. 22 - Feb. 28	Construction	x
Mar. 1 - Mar. 7	Midsemester Presentations (Mar. 6)	Midsemester Powerpoint
Mar. 8 - Mar. 14	Design Notebooks (Mar.11)	Construction/Testing
Mar. 15 - Mar. 21	Spring Break	Spring Break
Mar. 22 - Mar. 28		Construction/Testing
Mar. 29 - Apr. 4		Construction/Testing
Apr. 5 - Apr. 11		Testing
Apr. 12 - Apr. 18	Engineering Expo	Testing
Apr. 19 - Apr. 25		Testing
		Poster
Apr. 26 - May 2	Poster Presentation (May 1)	Poster
		Final Report

May 3 - May 9	Design Notebooks (May 6)	Final Report
	Final Report (May 6)	
	Peer and Self Evals (May 6)	