

**BME 402 - Heart Phantom**  
*Progress Report Week 1 – 1/23/09 to 1/29/09*

*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:**

- Evaluate last semester’s design
- Brainstorm list of questions for client
- Individual research on vasculature, anatomy, fluid flow, flexible tubing, and through wall connections
- Set up client meeting

**Summary of Accomplishments:**

- Evaluated flaws and areas that need improvement in last semesters design (heart chamber, leaking, through wall connections, tubing flexibility, consistent fluid flow, ect.)
- Brainstormed list of questions for client meeting
- Individual research (vasculature – Lacey, anatomy – Jess, fluid flow – Peter, flexible tubing – Fan and through wall connections – Erin)
- Set up client meeting for Friday, January 30<sup>th</sup>

**Goals this Week:**

- Brainstorm ideas for changing components of the design (individual and group)
- PDS
- Take apart prototype from last semester and salvage any parts
- Begin creating parts list

**Project Difficulties:**

- Our client was out of town last week so we were just able to set up our client meeting this Friday.

**Activities:**

Date	Person	Activity	Time Spent
1/23/09	Team	Team meeting (assigned roles, set up meeting times, evaluated last semesters design and individual research assignments)	0.75 hr
	Individual	Individual research (vasculature – Lacey, anatomy – Jess, fluid flow – Peter, flexible tubing – Fan and through wall connections – Erin)	1.50 hrs each
1/29/09	Team	Team meeting (discussed individual research and brainstormed questions for client)	1.00 hr

**Team Hours:**

Weekly..... 9.25 hrs  
 Total..... 9.25 hrs

**Project Timeline:**

Jan. 18 - Jan.24		Project Selection	x
		Contact Client	x
Jan. 25 - Jan. 31		Individual Research	x
		Client Meeting	
		Brainstorm	
		PDS	
Feb. 1 - Feb. 7		Finalize Design	
		Order Parts	
Feb. 8 - Feb. 14		Construction	
Feb. 15 - Feb. 21		Construction	
Feb. 22 - Feb. 28		Construction	
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)	