BME 400 - Heart Phantom

Team Members:
Peter Strohm (Team Leader)
Lacey Halfen (Team Leader)
Jess Hause (Communicator)
Erin Main (BSAC)
Fan Wu (BWIG)

Client:
Orhan Unal

Progress Report Week 6 – 10/13/08 to 10/19/08

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.

Summary of Accomplishments:

- Created Solidworks assembly of design
- Finished mid-semester presentation
    - Includes "Tubing Design" and "Polymer Design"
    - Background information
    - Specific alternatives for chosen design

Goals last Week:

- Continue researching materials
- Mid-semester presentation
- Order parts

Goals this Week:

- Complete and turn in design notebooks
- Peer/self evals
- Meet with client
- Order supplies
- Begin design construction if possible

Project Difficulties:

- Outer cylinder acrylic casing very expensive (several hundred dollars for the dimensions required)
- Client once again out of town

Activities:

Date	Person	Activity	Time Spent
10/16/08	Team	Meeting – Finalized PowerPoint, practiced presentation	1.50 hr
	All	Individual editing of PowerPoint and practicing individual parts	2.00 hr each
10/17/08	Team	Mid-semester presentation	2.00 hr

Team Hours:

Weekly……13.50 hrs
Total……59.50 hrs

Project Timeline:

Aug. 31	Project Proposal (Sept. 2)	Project Selection	x
		Contact Client	x
Sept. 7		Individual Research	x
Sept. 14		Client Meeting (Sept. 19)	x
		Project Timeline	x
		PDS	x
Sept. 21		Research	x
		Individual Brainstorm	x
		Group Brainstorm	x
Sept. 28		Develop Designs	x
Oct. 5		Design Alternatives (2)	x
		Mid-semester PowerPoint	x
Oct. 12	Mid-Semester Presentations (Oct. 17)	Finalize Design Alternatives	x
		Decide on Final Design	x
		Design Matrix	x
		Prepare for Presentation	x
Oct. 19	Design Notebooks (Oct. 22)	Finalize Design	
	Peer/Self Evals (Oct. 24)	Order Supplies	
Oct. 26		Work on Design	
Nov. 2		Work on Design	
Nov. 9		Work on Design	
		Begin Paper	
Nov. 16		Finalize Prototype	
		Continue Working on Paper	
Nov. 23		Testing	
		Complete Paper	
		Design Poster	

Nov. 30	Final Design Presentations (Dec. 5)	Complete Testing
		Prepare for Presentation
Dec. 7	Design Notebooks (Dec. 10)	
	Final Paper (Dec. 10)	
	Client Eval (Dec. 10)	
	Peer/Self Evals (Dec. 12)	