

MRI Fat Quantification Phantom

Client:

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Team:

Bogdan Dzyubak (Team Leader)
Joe Helfenberger (BSAC)
Nick Balge (BWIG)
Matt Parlato (Communicator)

Progress Report for October 23 – October 29

Problem Statement:

The goal of this project is to develop an MRI phantom for the quantification of fat. This phantom will be used to test MRI techniques developed by the client for the imaging of fat *in vivo*. The phantom must contain samples of known physiologically relevant quantities of fat. The eventual purpose is quality control of MRI scanners that use fat-water contrast imaging.

This Week's Goals:

- Meet with Gary Frank to get comments on our material choices
- Meet with the client to report our material choices
- Order the materials
- Find safflower oil and order it
- Work on the report

This Week's Accomplishments:

- Met with Gary Frank and discussed material choices, received advice on cheaper suppliers of the same materials
- Reported findings to Dr. Block and confirmed the materials purchase
- Purchased the materials that are presently thought necessary (see Expenses section)
- Received UHMWPE and glass vials
- Worked on the report

Next Week's Goals:

- Schedule a working time in the machine shop and, if possible, make the honeycomb
- If the rest of the materials arrive, begin mixing the solutions
- If enough materials arrive and progress is made, meet with the client to report this and discuss future progress
- Put together a draft of the report

Project Difficulties:

- Most members of the team were very busy with other classes.

Team Activities

Date	Members	Activity	Time Spent
10/23/09	Joe. Bogdan	Meeting with Gary Frank	1 hr
10/23/09	Bogdan	Meeting with Dr. Block	0.5 hr
10/23/09	Bogdan	Search for plastic container	1 hr
10/23/09	Matt, Bogdan	Ordering materials and searching for vials/formaldehyde	1.5 hr
10/26/09	Matt	Sending out last order forms	0.5 hr
10/27/09	Bogdan	Working on the report	2.5 hr

Project Schedule

Task	September				October					November				December		
	3	10	17	24	1	8	15	22	29	7	14	21	28	5	12	17
Project Development																
Research																
Brainstorm/Design Development																
Finalize Design																
Prototyping																
Order Supplies																
Deliverables																
Progress Reports																
Mid-semester Presentation (10/16)							*									
Final Paper (12/11)															*	
Final Poster (12/4)														*		
Meetings																
Client																
Advisor																
Website																
Online																

* = deliverable due

Future Timeline

Task	October	November				December	
	—	7	14	21	28	5	12
Project Development							
Brainstorm/Design Development							
Finalize Design							
Prototyping							
Order Supplies							
Deliverables							
Draft Paper							
Finalize Paper							
Prepare Poster							
Submit Paper (12/11)							*
Present Poster (12/4)						*	

Expenses

Ultra High Molecular Weight Polyethelene (UHMWPE) - \$43.75

Clear Glass Vials - \$83.72

Animal Hide Gel – \$26.71

Ivory Hand Soap – \$8

Formaldehyde – \$23.01

Acrylic Tank (Lock & Lock Box) – \$9.99

Safflower Oil - \$6.99

Total: \$201.17