

Fine Needle Aspiration, Project 23

Client: Dr. Frederick Kelcz

Team Members: Kristen Seashore (Leader)
Tu Hoang Anh Mai (Communicator)
Chris Goplen (BWIG)
Jason Tham (BSAC)

Date: 11/3/06 to 11/9/06

Problem Statement: Fine needle aspiration is a biopsy method of collecting tissue samples. The procedure is currently manual and requires repetitive low yield sampling to collect enough cells for testing. The goal of our project is to maximize tissue sample size in a single, timely procedure. We propose to develop a device that automates the current biopsy procedure using precise needle oscillation and vacuum techniques. The automation of the device will reduce operating time, cost and discomfort for the patient.

Restatement of Team Goals: Research aspects of final design, meet with client to discuss design, and begin ordering parts.

Individual Goals for Next Week:

Kristen Seashore: Order materials and begin prototype construction.

Chou Mai: Continue research on wheels, gears, and biopsies to improve the final report.

Chris Goplen: Research gears and order parts for prototype.

Jason Tham: Order materials.

Summary of Accomplishments:

- The team met in class on Friday and discussed our research on vacuum mechanisms, motors, wheels, and gears. Chou emailed our client to set up a meeting and finalize our final design.
- Each team member continued research of various parts of our final design (i.e. vacuum, motors, gears, wheels) to help determine which we should propose to our client and order.
- We set up a client meeting for Friday at 12:30pm, but we are moving it to a later time so the team can attend the lecture on the Machine Shop.

Statement of Team Goals: Choose parts to order, continue research on final design, and begin construction.

Project Schedule: This week we will continue our research of final design materials. We hope to find more information on types of vacuum mechanisms, small motors, and gears. We will also finalize our final design with our client and chose parts to order for our prototype.

Difficulties: No difficulties this week.

Activities:

11.03.06	Team met in class to discuss materials research	1.5 hrs
11.04.06	Kristen: Researched small motors	30 min
11.05.06	Chou: Researched vacuum mechanisms	1 hr
11.06.06	Chou: Researched wheels and gears	30 min
11.07.06	Chou: Researched liver and breast cancer biopsies	1 hr
11.07.06	Jason: Researched motors and gears	1 hr
11.08.06	Chou: Called client to set up meeting	15 min
11.09.06	Chris: Researched gears	1.5 hrs
11.09.06	Kristen: Worked on progress report	1 hr

TOTAL HOURS THIS WEEK

7 hr 15 min

Project Time Line:

TASK	S. 8	S. 15	S. 22	S. 29	O. 6	O. 13	O. 20	O. 27	N. 3	N. 10	N. 17	N. 24	D. 1	D. 8
Project Design														
Research	X	X	X	X										
Brainstorming				X	X	X								
Designs					X	X	X	X	X	X				
Prototyping										X	X	X		
Testing												X		
Final Design												X	X	
Deliverables														
Progress Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Midsemester PowerPoint							X	X						
PDS		X	X	X	X	X	X	X	X	X	X	X	X	X
Final Presentation														X
Design Report														X
Meetings														
Client	X			X		X				X		X		
Team	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Professor		X	X	X	X	X	X	X	X	X	X	X	X	X
Website			X	X	X	X	X	X	X	X	X	X	X	X

Expenses: No expenses this week.

Task Delegations/Time Lines:

Tasks	Member	Date Due
Research		
FNA	all - more Chou	1-Dec
	all - more	
Biopsies/Tissues Tested	Kristen	13-Oct
Tissue/Needle Forces	Kristen, Chris	13-Oct
Current Devices (why fail?)	Chris, Jason	13-Oct
Related Devices	all - Jason	13-Oct
Needle types	Chou	13-Oct
Clinical procedures	Jason	13-Oct
Sample collection	all - more	
testing/procedure	Kristen	13-Oct
Patents	Chris, Jason	13-Oct
Materials for prototypes	all	13-Oct
Construction/Testing methods	all	10-Nov
Designs		
Brainstorming	all	13-Oct
Alternate Designs (3)	all	13-Oct
Design Matrix	all	13-Oct
Prototyping		
Set up checking account	all	ASAP
Research materials	all	3-Nov
Order materials	all	17-Nov
Build prototype	all	17-Nov
Testing/Build phantoms	all	24-Nov
Revise prototype	all	1-Dec
Deliverables		
Mid - PowerPoint	all	20-Oct
Mid - Paper	all	25-Oct
Notebooks	all	25-Oct
Final - Poster	all	8-Dec
Final - Paper	all	15-Dec
Progress Reports	all	every week
PDS	all	often