

Pulse Oximeter Team

Progress Report #11

4/11/09 – 4/18/09

Team Members

Bogdan Dzyubak – Communicator
Joe Helfenberger—BWIG
Jonathan Meyer—Leader
Matthew Parlato—BSAC

Clients

Amit Nimunkar
Jonathan Baran

Advisor

Dr. John Webster PhD.

Problem Statement

The purpose of this project is to develop a low-cost pulse oximeter probe for use in developing countries. It will be integrated with the MedCal, a handheld processing device which will record and display patient data. The oximeter must be rugged, durable, inexpensive, and must deliver data to the MedCal as an analog signal.

Team Goals

Previous goals for this week

- Acquire a suitable spring, with a low enough spring constant that the probe can be clipped on an ear for an hour without damaging the tissue
- Construct initial prototype
- Contact mechanics lab for testing
- Characterize LEDs and pick calibrating resistors

Goals for next week

- Finish building the prototype
- Build a copy of the probe for mechanical testing
- Contact mechanics lab for testing
- Conduct mechanical testing
- Characterize LEDs and pick calibrating resistors

This week's accomplishments

- Developed a probe design based on a clothespin with a plastic spring.
- Completed most of the probe's construction

Project Schedule

The table below is a Gantt chart of the projected timeline. Dark colors are used for completed stages, and light colors for incomplete stages.

Tasks	January		February				March				April				May	
	23	30	6	13	20	27	6	13	20	27	3	13	17	24	1	8
Project Development																
Research	█	█	█	█												
Brainstorm				█	█											
Design					█	█	█	█	█	█						
Prototype										█	█	█	█	█	█	
Deliverables																
Progress reports	█													█	█	█
Midsemester presentation							█									
Midsemester report								█								
Final presentation															█	
Final report																█
Communication																
Advisor Meetings		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Client Meetings	█	█										█	█	█	█	█
Website		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

Difficulties

No extraordinary difficulties were encountered this week.

Activities

Date	Time	Team member(s)	Activities
4.10.09	2 h	Team	Attended Tong entrepreneurship lecture, met with Dr. Webster
4.11.09	0.45 h	Joe	Finished shop certification (last two quizzes).
4.11.09	1.5 h	Jonathan	Shopped for springs
4.11.09	2 h	Matt	Bought clothespins, worked on prototype (mechanical design)
4.12.09	4 h	Bogdan and Joe	Purchased springs
4.13.09	3.5 h	Bogdan, Joe, Jonathan	Worked on prototype
4.13.09	2.25 h	Matt	Worked on prototype
4.14.09	2.5 h	Matt	Worked on prototype and circuitry
4.15.09	5.5 h	Joe	Worked on prototype and EXPO presentation
4.15.09	9 h	Bogdan	Worked on prototype
4.15.09	3 h	Matt	Worked on prototype circuitry
4.16.09	1 h	Joe	Finished EXPO presentation
4.16.09	2.5 h	Bogdan and Matt	Worked on prototype
4.17.09	4 h	Bogdan and Jonathan	Worked on prototype

Expenses

Items	Cost
4 photodiodes (2mm×2mm)	< \$20