

Pulse Oximeter Team

Progress Report #10

4/3/09 – 4/10/09

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

- Identify and acquire a suitable plastic
- Have SolidWorks draft reviewed by Eamon Bernardoni
- Begin prototyping

Goals for next 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

This week's accomplishments

- Switched to a probe design based on a clothespin, due to problems with the previous design.
- Began prototyping, identified need for a weaker spring

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

We are having difficulty acquiring a spring with a low enough spring constant

Activities

Date	Time	Team member(s)	Activities
4.6.09	0.45 h	Team	Team meeting, switched to clothespin design
4. 8.09	0.45 h	Matt	Acquired shop certification
4. 8.09	1.75 h	Joe	Worked on shop certification
4. 9.09	~1 h	Jonathan	Worked on shop certification
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4. 9.09	5.5 h	Bogdan,	Worked on prototype
4. 9.09	3.083 h	Matt, Joe	Worked on prototype
4. 9.09	1.17 h	Jonathan	Worked on prototype
4.10.09	~2 h	Team	Attended Tong lecture, Met with Dr. Webster, Met with Amit

## Expenses

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