

# Pulse Oximeter Team

## Progress Report #12

4/18/09 – 4/23/09

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### Team Members

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

### Clients

Amit Nimunkar  
Jonathan Baran

### Advisor

Dr. John Webster PhD.

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## 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.

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## Team Goals

### Previous goals for this 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

### Goals for next week

- Remove the noise from the prototype's signal
- Build a copy of the probe for mechanical testing
- Contact mechanics lab for testing
- Conduct mechanical testing
- Develop poster
- Give final presentation

### This week's accomplishments

- Finished the initial prototype
- Tested the prototype's compatibility with the MedeCal circuit

## 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
<b>Project Development</b>																
Research	█	█	█	█												
Brainstorm				█	█											
Design					█	█	█	█	█	█						
Prototype										█	█	█	█	█	█	█
<b>Deliverables</b>																
Progress reports	█														█	█
Midsemester presentation							█									
Midsemester report								█								
Final presentation																█
Final report																█
<b>Communication</b>																
Advisor Meetings		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Client Meetings	█	█									█	█	█	█	█	█
Website		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

## Difficulties

No extraordinary difficulties were encountered this week.

## Activities

Date	Time	Team member(s)	Activities
4.18.09	4 h	Bogdan, Jonathan	Worked on prototype
4.18.09	0.5 h	Joe	Worked on presentation
4.20.09	~ 1 h	Jonathan	Worked on prototype
4.22.09	1 h	Matt, Bogdan, Jonathan	Discussed probe design improvements, tested compatibility of the probe with the MedεCal circuit
4.22.09	0.5 h	Matt	Researched techniques for working with photodiodes
4.23.09	~ 2.5 h	Matt, Bogdan	Worked on prototype, Identified ways to reduce noise in the signal
4.23.09	0.5 h	Jonathan	Worked on prototype, identified ways to reduce noise in the signal
4.23.09	1.5 h	Joe	Worked on presentation
4.25.09	3 h	Team	Met with Dr. Webster, worked on prototype, divided up sections for presentation
4.25.09	0.25 h	Jonathan	Met with Chris, learned how to operate the pulse oximetry circuit.

## Expenses

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