

Phantom for Pulse Oximeter

Client: Dr. John Webster

**Team Members: Lucas Vitzthum (Leader)*

Tyler Lark (BSAC)

Nick Harrison (Communications)

Fan Wu (BWIG)

**(Tentative roles as we try to schedule around BSAC)*

Jan. 26-Feb. 2

Problem Statement

Develop a device which can be used to test a pulse oximeter for use in developing countries. The device must be able to test the pulse oximeter's ability to read both a pulse and an oxygen saturation level at various know pulses/saturations. Furthermore, in order to maintain affordability for developing countries the production cost may be no greater than ten dollars for every 500 units manufactured.

Last Week's Goals

- Contact and meet with Dr. Webster
- Establish Team Roles
- Individually research Pulse Oximeters

Summary of Accomplishments

Initially, we established email contact and established group roles.

Entire group met with Dr. Webster on Wednesday, Jan 31 from 2:30-3:30. He explained basic requirements for a pulse oximeter tester and gave a tour of the lab with a demonstration a functioning pulse oximeter.

We individually researched the science behind pulse oximetry and brainstormed ways to mimic the physiological signals a pulse oximeter reads.

This week's Goals

- Meet on Sunday, Feb 4 in Wendt library to brainstorm and write rough draft of proposal for EWH
- Meet with advisor
- Research cheap prosthetic materials to mimic saturated/unsaturated blood
- Research mechanical devices to create "pulse"

- Send draft of proposal to Dr. Webster
- Figure out team roles (who can make it to BSAC)

Project Timeline

1/26	Form team, contact client, assign team roles, set up client meeting
2/2	Literature search, create problem statement, begin PDS, send EWH proposal to client
2/9	PDS, brainstorming, begin developing designs, send in final EWH proposal
2/16	Brainstorming
2/23	Decide on 3 design alternatives, prepare for mid-semester presentation
3/2	Mid-Semester Presentation
3/9	Hand in report and notebooks
3/16	Work on final design
3/23	Decide on final design
3/30	Work on final design
4/6	Spring Break
4/13	Work on final design/ Begin testing
4/20	Test prototype
4/27	Finish Testing prototype, begin preparing poster and paper
5/4	Final Poster Presentation
5/9	Hand in final written report and notebooks
5/11	Final meeting with advisors

Activities

Lucas:

Meet group in class and establish roles (1hr)

Meet with Client (1hr)

Research pulse oximetry (2hrs)

Researched literature (1hr)

Total: 5 hours

Fan:

Meet group in class and establish roles (1hr)

Meet with Client (1hr)

Research pulse oximetry (2hrs)

Total: 4 hours

Tyler:

Meet group in class and establish roles (1hr)

Meet with Client (1hr)

Research pulse oximetry (2hrs)

Total: 4 hours

Nick

Meet group in class and establish roles (1hr)

Meet with Client (1hr)

Research pulse oximetry (2hrs)

Total: 4 hours

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Jan. 26-Feb. 2

Problem Statement

We need a project!!

Last Week's Goals

- Meet on Sunday, Feb 4 in Wendt library to brainstorm and write rough draft of proposal for EWH
- Meet with advisor
- Research cheap prosthetic materials to mimic saturated/unsaturated blood
- Research mechanical devices to create “pulse”

Summary of Accomplishments

Researched possible prosthetic blood materials and requirements for EWH funding, and discovered that pulse oximeter project is no longer an option

Created new deadline based on EWH requirements for funding.
(pushed back EWH proposal)

Met online for one hour and discussed new course of action. Decided to pick new EWH project. Narrowed selection down to: Temp tester, water purification check and mechanical aspirator

Set up meeting with client and advisor to discuss possible new projects.

Individually researched each new option and reported results at group meeting on Friday.

This week's Goals

- Decide project on Friday group meeting

- Meet on Sunday 7pm in discuss new project
- Come up with new PDS for project

Project Timeline

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Activities

Lucas:

- Researched EWH funding (1hr)
- Researched new projects (1.5hr)
- Online Meeting (1hr)
- Total: 3.5 hours**

Fan:

- Online Meeting (1hr)
- Met with Client (1hr)
- Researched new projects (1hr)
- Total: 3 hours**

Tyler:

Online Meeting (1hr)

Met with Client (1hr)

Researched new projects (1hr)

Total: 3 hours

Nick

Online Meeting (1hr)

Met with Client (1hr)

Research pulse oximetry (1hrs)

Researched new projects (1hr)

Total: 4 hours

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Feb 3 – Feb 11

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- Researched new projects (1.5hr)
- Online Meeting (1hr)
- Total: 3.5 hours**

Fan:

- Online Meeting (1hr)
- Met with Client (1hr)
- Researched new projects (1hr)
- Total: 3 hours**

Tyler:

Online Meeting (1hr)

Met with Client (1hr)

Researched new projects (1hr)

Total: 3 hours

Nick

Online Meeting (1hr)

Met with Client (1hr)

Research pulse oximetry (1hrs)

Researched new projects (1hr)

Total: 4 hours