# *Quad Rat Vitals Monitor*

*Progress Report #8, November 14, 2008*

*Client: Dr. Alex Converse*
*Team: Jack Ho (Leader)*
*Kuya Takami (Communications)*
*Nate Werbeckes (BWIG)*
*Joseph Yuen (BSAC)*

**October 30 to November 14, 2008**

**Problem Statement**

Design and construct a quad rat vitals monitor to be used during PET imaging experiments in order to maintain appropriate anesthesia dosages on each of the four rats independently. The device will monitor heart rates, SpO2 values, respiratory rates, and rectal temperatures.

**Last Weeks Goals**

- Continue characterizing sensor outputs
  - Find the pin out manual for the sensor
- Research DAq boxes and see which one is most suitable for us

**Summary of Accomplishments**

In the past couple weeks, we were able to determine the pinouts for the sensor connection to our pulse oximeter and began to take voltage signals in hopes to find and characterize the signal. Unfortunately we weren't able to find a recognizable signal and believe that there is an essential pre-amp that produces the signal for the main box to process.

Nate has received the newly bought DAq box (from Dr. Converse's budget) that should be able to acquire all our signals at the appropriate frequency. Nate will continue to work on the LabVIEW program.

Joseph, Kuya, and I have been able to build our own pulse oximeter circuit following the PSU journal article. We hope to test it soon once we acquire the last parts, the red and infrared phototransistors and LED's. We have also built the thermometer circuit using thermistors.

**This Weeks Goals**

- Continue building our pulse ox and thermistor circuit
- Continue working on LabVIEW

**Activities**

Jack:

Work on device (4.0 hrs)

**Total: 4.0 hrs**

Kuya:

Client meeting (1.0 hrs)
Work on device (4.0 hrs)
**Total: 5.0 hrs**

Nate:

Client meeting (1.0 hrs)
Work on LabVIEW programming (4.0 hrs)
**Total: 5.0 hrs**

Joseph:

Client meeting (1.0 hrs)
Work on device (4.0 hrs)
**Total: 5.0 hrs**

**Project Schedule**

| | |
|---|---|
| 9/5 | Form team, contact client, assign team roles, set up client meeting |
| 9/12 | Literature search, create problem statement, begin PDS |
| 9/19 | PDS, brainstorming, begin developing designs |
| 9/26 | Brainstorming |
| 10/3 | Decide on 3 design alternatives, prepare for mid-semester presentation |
| 10/10 | Work on presentation |
| 10/17 | Mid-Semester Presentation |
| 10/24 | Hand in report (and PDS) and notebooks, decide on final design |
| 10/31 | Work on final design |
| 11/7 | Work on final design |
| 11/14 | Work on final design |
| 11/21 | Work on final design, poster presentation and paper |
| 11/28 | Thanksgiving Break |
| 12/5 | Final Poster Presentation |
| 12/10 | Hand in final written report and notebooks |
| 12/12 | Final meeting with advisors |

**Expense**

| *Date* | *Place* | *Purchased* | *Price* |
|---|---|---|---|