

**\* Progress Report 13**

**\* Title:** Measurement of Pulse Transit Time

**\* Names:** Blake Hondl (Team Leader)  
Anna Karas (Communications)  
Zak Cohen (BWIG)  
Meghan Olson (BSAC)

**\* Client:** Christopher G. Green, M.D.

**\* Advisor:** Mitch Tyler

**\* Date:** 11/25/05 – 12/01/05

**\* Problem Statement:** Develop a device/method to measure pulse transit time (PTT) in pediatric patients using signals from an ECG monitor and an oximeter. This will allow a physician to monitor whether a patient is being aroused from REMS sleep and help the physician determine if the patient has obstructive sleep apnea.

**\* Restatement of Team Goals:**

- Modify Labview program to calculate and display PTT
- Acquire patient or ECG simulator to facilitate testing/demonstration
- Complete sections of Final Presentation
  - Practice and present presentation

**\* Summary of Accomplishments:**

- Labview program works correctly
  - Calculates PTT
  - Runs for pre-determined length of time
- ECG simulator acquired
  - May not be appropriate for our presentation
- Final presentation completed
  - All slides completed and printed
  - Presentation practiced
  - Presentation date postponed to 12/09/05
- Divided sections of final report

**\* Statement of Team Goals:**

- Practice presentation further to improve overall delivery
- Acquire patient or ECG simulator to facilitate testing/demonstration
- Complete sections of Final Presentation
  - Practice and present presentation
- Complete final report and hand in

**\* Project Schedule:**

Week		Activities
1	09/02/05	Assign team roles, contact client to set up meeting
2	09/09/05	Research design topics, define questions for meeting with client, start PDS

3	09/16/05	Meet with client, continue research on design topics, complete PDS
4	09/23/05	Meet with sleep lab neurophysiologist, establish possible design solutions
5	09/30/05	Choose the best design solution, research resources to help in the implementation of the design, start detailed design specification
6	10/07/05	Complete detailed design specification, possible work on prototype, work on midsemester presentation,
7	10/14/05	<b>Midsemester presentation</b>
8	10/21/05	Begin work on prototype
9	10/28/05	Build ECG and oximetry circuits Software code to take in .edf file
10	11/04/05	Test ECG and oximetry circuits Software code to calculate PTT
11	11/11/05	Software code to display PTT to user Research hardware for extra circuit capability
12	11/18/05	Complete prototype: Hardware appropriate for presentation Complete software for displaying PTT from .edf file
13	11/25/05	Work on poster presentation Minor modifications to hardware and software <b>Thanksgiving</b>
14	12/02/05	Complete poster presentation Work on final report <b>Final poster presentations</b>
15	12/07/05	Complete final report <b>Final report and notebooks due</b>
15	12/09/05	<b>Final meeting with advisor</b>

\* **Difficulties:** Calculating PTT in labview

\* **Activities:**

**Group:**

Team meetings: 5.0 hrs

**Individual:**

*Blake Hondl*

Labview programming: 4.0 hrs

Work on presentation slides: 2.0 hrs

Acquiring ECG simulator: 1.0 hr

*Anna Karas*

Work on presentation slides: 2.0 hrs

Oximetry circuit testing: 1.0 hr

Team communication: 0.25 hr

*Meghan Olson*

Labview programming: 2.0 hrs

Work on presentation slides: 1.5 hrs

*Zak Cohen*

Work on presentation slides: 2.0 hrs

Weekly Total: 35.75 hrs

Semester Total: 253.0 hours

**\* Expenses:**

	<b>Item</b>	<b>Cost</b>
<b>Fall 2005</b>	ECG and oximetry circuit components	\$25.23
		\$
<b>Total</b>		<b>\$25.23</b>