

## **Progress Report #8: EEG Biofeedback System**

BME 400

November 2, 2006 – November 9, 2006

Client: Daniel Muller, MD, PhD

Team Members:      Cullen Rotroff (Leader/Communicator)  
                             Prakash Rao (Leader/Communicator)  
                             Joe Hippensteel (BSAC)  
                             Andrew Eley (BWIG)

### **Problem Statement**

The goal of our project is to design and build an inexpensive, portable electroencephalogram (EEG - brain wave monitor) that teaches meditation practitioners to achieve optimal meditation by indicating the presence of EEG alpha and theta waves. This shall be achieved through a relatively inexpensive, minimally distracting, and potentially portable device intended for commercial use.

### **Last Week's Goals**

- Meet with client on 11/3 and give update on our progress.
- Finish Pspice simulations of amplifier/filter and start building something on a breadboard
- Continue testing active electrode designs on breadboards and decide which design would be appropriate.
- Start planning for the integration of the electrodes and amplifier

### **Summary of Team Accomplishments**

- Met with Dan Muller on Friday to update him with our progress to date. We were enthusiastically received and told of the potential of a possible budget increase.
- Continued simulating our circuit design on Pspice
- Completed a very simple but encouraging bread board simulation for an active electrode design capable of cleanly amplifying a 100 micro volt signal.

### **This Week's Goals**

- Begin bread board assembly of bio-amplifier
- Complete and test first Active electrode
- If active electrodes and bio-amplifier work as expected begin planning implementation of design, otherwise, back to the drawing board.

### **Difficulties**

none

### **Activities**

<b>Team Member</b>	<b>Activities</b>	<b>Time</b>
Cullen Rotroff	Friday meeting (2.0), work on electrodes (1.0)	<b>3.00</b>
Prakash Rao	Friday meeting (2.0), Pspice simulations (3.5)	<b>5.50</b>
Andrew Eley	Friday meeting (2.0), Pspice simulations (3.5)	<b>5.50</b>
Joe Hippensteel	Friday meeting (2.0), work on electrodes (1.0)	<b>3</b>
<b>Total</b>		<b>17.00</b>

### **Expenses**

<b>Product</b>	<b>Quantity</b>	<b>supplier</b>	<b>price</b>

