**Project Title:** EEG Biofeedback Device

**Team Members:**
Ashley Anderson, Team Leader  aandersoniii@wisc.edu  
Chris Wegener, Co-Leader  cjwegener@wisc.edu  
Michele Lorenz, Communicator  lorenz@wisc.edu  
Ryan Thome, BWIG  thome@wisc.edu  
Shikha, BSAC  shikha@wisc.edu

**Client:**  
Daniel Muller, MD, PhD  
Medicine (Rheumatology)  
Institute on Aging, Mind-Body Center  
2605 MSC  
UW-Madison  
265-2478  dmuller@wisc.edu

**Advisor:**  
John Webster

**Date:** 09/16/05

**Problem Statement:**
(Project Description)

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 the presence of EEG alpha and theta waves.

**Restatement of team goals:**
1. Meet with client  
2. Create Problem statement  
3. Begin work on PDS  
4. Begin research and design  
   a) Research all possible background information.  
   b) Research existing solutions  
   e) Develop possible design solutions  
5. Continue research, design, and testing  
6. Write Midterm paper  
7. Create PowerPoint presentation  
8. Discussed possible final design alternative  
9. Finalize design  
10. Build and test prototype
11. Present final design

**Project Schedule:**

- 09/02/05 – Choose team and project, set up meeting with client
- 09/09/05 – Meet with client, background research, discuss PDS
- 09/16/05 – 10/07/05 – Brainstorm, work on design
- 10/07/05 – Finalize oral presentation
- 10/14/05 – Oral presentations, written report, PDS, and notebooks are due
- 10/14/05 – 11/18/05 – Work on design
- 11/25/05 – Thanksgiving
- 12/02/05 – Final poster presentations
- 12/07/05 – Final written report, notebooks due
- 12/09/05 – Final meeting with advisor

**Summary of Team Accomplishments:**

1. Acquired sample electrodes and amplifiers
2. Tested sample electrodes and amplifiers with an oscilloscope in Professor Webster’s lab
3. Continued background research
4. Looked at amplifier designs in other resources

**Summary of Individual Accomplishment:**

1. Shikha met with Professor Webster to discuss previous team’s design
2. Everyone did an excellent job with research
3. Ryan wrote the progress report

**Statement of Team Goals:**

1. Begin work on PDS
2. Decide on several electrode designs and test them
3. Build an amplifier
4. Use sample electrodes to test for best head placement areas.
5. Begin to investigate analogue vs. digital

**Difficulties:**

Chris left for the national BMES convention this week, and because of busy schedules we were unable to meet as an entire team outside of class. We had trouble getting a signal using the sample electrodes and amplifiers in Professor Webster’s lab. We were unable to determine whether the problem was with the equipment itself, or the way in which we hooked it up. We need to develop an amplifier design and build it.

**Activities:**

- Ashley – team meetings .5 hr
  --amplifier research 1.5 hr
- Chris – team meetings 1.5 hr
  --general research 1 hr
- Michele – team meetings .5 hr
  --electrode research 1.5 hr
Ryan – team meetings 1.5 hr
   --general research 1 hr
Shikha – team meetings 1.5 hr
   --general research 2 hr

**Team Total Hours for this week:** 12.5
**Cumulative Team Hours to date:** 49