Project Title: Ophthalmic Dose Compliance Monitor
Team Members: Arinne Lyman, Anita Zarebi, Becky Koszalinski, Michael Alexander
Client: Christopher J. Murphy DVM, PhD
Advisor: Wally Block
Date: 9-23-05 to 9-29-05

Problem Statement:
Develop a dose compliance monitor that would record (unknown to the client) when (date and time) a topical ophthalmic medication was delivered. There are several older studies performed in the 80's that used a compliance monitor specifically designed for topical ophthalmic medications, and I am hopeful that we would be able to develop a cost effective improved model. Ideally we would be able to manufacture approximately 10 of these devices for use in studies. It could be as simple as some of the older models that recorded when the top of the bottle was removed and the bottle inverted. Maintenance of sterility of the medication is imperative. The simplest designs would simply provide a thin sleeve that the commercial 5, 15, or 30 ml topical ophthalmic medication bottle slid into. There are many possibilities and I am hopeful that some of your students would find this challenging. These would initially be used in research of patient compliance.

Statement of Team Goals:
1. Problem statement
2. Create first draft of PDS
3. Set up meeting with client
4. Begin to research and develop design ideas
5. Research specs on parts as well as cost and dimensions
6. Continue the design project.
   a) Research all possible background information.
   b) Research existing solutions on the market
   c) Brainstorm in individual teams
   d) Meet with experts to gain ideas about possible solutions
   e) Develop possible design solutions
7. Continue to develop final design alternatives
8. Write midterm paper
9. Create power point presentation
10. Discussed possible final design alternative
11. Finalize design
12. Further develop and test prototype
13. Present final design
Summary of Team Accomplishments:
This past week our team met to finalize our three best designs for use in the mid-semester presentation. We also put together a design matrix to do this analysis. We did a little bit more research into another sensing device and found a gyroscope that could measure when a device is inverted. We possibly will use this new development in our final design.

We also were able to get a hold of someone in the neurophysiology department who has experience with medical circuitry. We have set up a meeting with him this Friday at noon so we wont be available to meet with you this week—Sorry Wally. We can reschedule at your convenience. We hope this person will become a valuable asset to our project since none of us are well versed in circuitry. Our client is willing to pay him for his time.

We were supposed to have had a client meeting on Tuesday but Dr. Murphy was late and only I had a chance to meet with him. We gave him a packet of product specifications and our design matrix and he will help us choose the final design next week after we meet with Dan Yee (Neurophysiology Lab).

Our project is coming along better this week because of the people we have lined up to meet with and who are willing to help us. Our client has all the confidence we can create a prototype, even if the circuit has to be larger than he prefers. As long as it can be miniaturized later, he will be happy with a larger device, however our sensors should be invisible to the eye. I don’t foresee any major problems as of yet and we are all optimistic that this will work as of this week.

Project Schedule:
9/2       Form team, contact client, assign team roles, set up client meeting
9/9       Literature search, create problem statement, begin PDS
9/16      PDS, brainstorming, begin developing designs
9/23      Design research
9/30      Design Research
10/7      Work on mid-semester presentation paper and presentation (oral and power point)
10/14     Mid-semester presentation
10/21     Work on final design (i.e. develop a prototype, testing, etc)
10/28     Continue working on final design
11/4      Work on design
11/11     Work on design
11/18     Continue working on design, start working on presentation
11/25     No Class (Thanksgiving)
12/2      Prepare final presentation and paper
12/9      Final poster presentation
12/16     Hand in report and notebook
12/23     Last day of finals

Activities:
Arinna:
Group meetings (2 hrs)
Design Research (1 hrs)
Meeting with client (1.5 hrs)
Miscellaneous (2 hrs)
Total: 6.5 hrs

Anita:
  Group meetings (2 hrs)
  Design Research (1 hrs)
  Meeting with client (.5 hrs)
  Miscellaneous (2 hrs)
Total: 5.5 hrs

Becky:
  Group meetings (2 hrs)
  Design Research (3.5 hrs)
  Meeting with client (.5 hrs)
  Miscellaneous (1 hr)
Total: 7 hrs

Michael:
  Group meetings (2 hrs)
  Design Research (1 hrs)
  Meeting with client (.5 hrs)
  Miscellaneous (2 hrs)
Total: 5.5 hrs

Team Total Hours for this week: 24.5 hrs