**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:** 9-30-05 to 9-6-05  

**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 we have finalized our components to be presented next Friday. I have assigned parts of the paper to each team member to be completed by Friday so we can work on the presentation. We also have a client meeting at noon on Friday so we will not be in class—if it gets out before 1:30 we will be able to come to meet with you the last part of class. The meeting with Dan Yee last Friday went really well. He gave us a tour of the lab and said he could be at our disposal for anything concerning the circuitry involved in our device. We will most likely do our testing there since they have all the equipment we will need. He will definitely be a valuable asset to our project.

After the midsemester presentation and our meeting with our client we will begin to order all the components, test them, and start designing the circuit. We are now fairly confident that we can produce a working prototype, at least in the preliminary stages, to be completed later on at the client’s discretion (i.e. miniaturization, mass production, etc).

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:
Arinne:
Design Research (1 hr)
Paper writing (2 hrs)
Miscellaneous (1 hr)
Total: 4 hrs

Anita:
Design Research (1 hr)
Paper writing (2 hrs)
Miscellaneous (1 hr)
Total: 4 hrs

Becky:
Design Research (2 hrs)
Paper writing (2 hrs)

Miscellaneous (1 hr)
**Total: 5 hrs**

**Michael:**
- Design Research (1 hr)
- Paper writing (2 hrs)
- Miscellaneous (1 hr)
**Total: 4 hrs**

**Team Total Hours for this week:** 17.0 hrs