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: 9-15-05 to 9-22-05

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 met with various people to get a better understanding of whether or not we need to start large and then miniaturize, or start off small. Our client wants us to just “go for it” and buy anything we need to create a working prototype as soon as possible. However, after talking to professors and our advisor last week, we decided that starting off large will be the simplest plan. We also met with David Beebe and Professor Hiskins, both of whom recommended other people whose expertise we can employ. Our client also made a call to some lab technicians in SMI (Med School) who may also be able to help us with the technical aspects. As of right now, ideas are clashing between our client and other professors as to our starting out large. We hope to get this resolved by the next client meeting.

We also have been researching the components of our device further. We have more information on the tach sensors as well as a new approach to recording date and time. Becky found a chip on the internet that is cheaper and also in a size we need so we will investigate that further. One of our goals for the next week is to get a list of components and order some to test as well as finalize our top three design ideas for the mid-semester presentation.

Project Schedule:

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

Arinne:

Meet with professors (1 hr)
Design Research (1 hrs)
Meeting with client (1 hr)
Miscellaneous (2 hrs)

Total: 5 hrs

Anita:

Meet with professors (1 hr)
Design Research (2 hrs)
Meeting with client (1 hr)
Miscellaneous (3 hrs)
**Total: 7 hrs**

**Becky:**
Design Research (8 hrs)
Meeting with client (1 hr)
Miscellaneous (1 hrs)
**Total: 10 hrs**

**Michael:**
Design Research (1 hr)
Miscellaneous (2 hrs)
**Total: 3 hrs**

**Team Total Hours for this week: 25.0 hrs**