

Calibrated Eye Dropper

Week 5: February 20 - February 26, 2009

Team: Sarah Switalski – Co-Leader
Michelle Tutkowski – Co-Leader
Brooke Sampone – Communicator
Jim Mott – BWIG
Eamon Bernardoni – BSAC

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Problem Statement:

A lab in the Department of Ophthalmology and Visual Sciences needs a device to accurately and efficiently deliver 5 μ L drops of experimental drugs into the cornea of the eye for glaucoma therapy testing in animals. Currently, the client uses standard micropipettes which deliver exactly 5 μ L drops, but this method is time consuming, poses a danger to the safety of the animal, and makes drop placement difficult. The objective is to optimize accuracy, efficiency, and animal safety in optical drug delivery.

Previous Week's Goals:

- Choose three or four alternative design ideas for further evaluation
- Devise calibration procedure
- Continue improving the chosen designs

Week 5 Activities:

Individual	Activity	Time (hours)	Weekly Total (hours)	Overall Total (hours)
Michelle	Independent	0.50	2.25	17.25
	Team Meeting	1.75		
	Client Meeting	0		
Eamon	Independent Work	1.00	2.75	20.50
	Team Meeting	1.75		
	Client Meeting	0		
Sarah	Independent Work	1.00	2.75	19.75
	Team Meeting	1.75		
	Client Meeting	0		
Brooke	Independent Work	2.00	3.75	22.00
	Team Meeting	1.75		
	Client Meeting	0		
Jim	Independent Work	2.00	3.75	23.50
	Team Meeting	1.75		
	Client Meeting	0		

Summary of Accomplishments:

The team discussed the pros and cons of each design idea and decided on three alternatives to further evaluate (flexible straw, sliding track reservoir, and positive displacement tip). The team created a design matrix and rated each design based on the design criteria chosen by the team. Based on the results of the design matrix, the team decided to pursue the sliding track reservoir design.

Next Week's Goals:**Individual Goals:**

- Brooke: Work on details and drawings of design alternatives, prepare midsemester presentation and paper, keep in contact with client
- Eamon: Work on details and drawings of design alternatives, prepare midsemester presentation and paper, BSAC
- Jim: Work on details and drawings of design alternatives, prepare midsemester presentation and paper, maintain website

- Michelle: Work on details and drawings of design alternatives, prepare midsemester presentation and paper, send out progress report
- Sarah: Work on details and drawings of design alternatives, prepare midsemester presentation and paper

Team Goals:

- Finalize dimensions and drawings of design alternatives
- Research micropipette materials, spare parts
- Prepare and practice midsemester presentation
- Write midsemester report

Difficulties:

There are no difficulties at this time.

Project Schedule:

Tasks	Jan		Feb				Mar					Apr				May		
	23	29	6	13	20	27	6	11	13	20	27	3	10	17	24	1	6	8
Research	X	X	X	X														
Brainstorming	X	X	X	X	X													
PDS			X															
Prototype Design				X	X													
Prototype Fabrication																		
Testing																		
Meeting with Client		X		X														
Team Meeting	X	X	X	X	X													
Presentation																		
Written Reports																		
Peer/Self Evaluations																		

Expenses:

There are no expenses at this time.