

BME 400 Weekly Progress Report
Team #31: Microscope Cell Culture Incubator

Client: Dr. John Puccinelli
Advisor: Professor Mitch Tyler
Team: Jack McGinnity - mcginnity@wisc.edu (Leader)
Trevor Zarecki – tzarecki@wisc.edu (BPAG)
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Jenny Westlund – jwestlund@wisc.edu (BWIG)
Peter Hartig – phartig@wisc.edu (BSAC)

Progress Report Period: Wednesday, February 1st - Wednesday, February 8th

Project Overview

Live cell imaging systems provide a controlled environment for cells to continue to live in while imaging is performed. Current live cell imaging chambers that are compatible with a standard inverting microscope are expensive and do not perform well with small culture vessels such as microfluidic devices. The team's goal is to design a low-cost incubator for use on a microscope that can sustain cell life while imaging is performed on a variety of cell-culture platforms.

Restatement of Second Semester Team Goals

- Further develop the prototype so that it is user friendly and readily available for extensive testing
- Conduct further testing and systems validation of the model
- Produce comprehensive written report

Summary of Team Accomplishments

- Trevor (BPAG): Researched and purchased a power supply
- Steve (Communicator): Continued Market research
- Jenny (BWIG): researched used of alternative printed materials, material coatings, and tested ABS with ethanol exposure
- Jack (Leader): Continued PCB design
- Peter (BSAC): Began testing with CO2 sensor and researched CO2 sensor sterilizing

Summary of Design Accomplishments:

We did stuff

Activities

Person	Date	Activity	Time (hr)	Weekly Total (hrs)	Semester Total
Team	2/1/17	Team Meeting	1.0	1.0	4.5
Trevor	1/1/17	Power Supply Research	1.5	2.75	3.75
	2/2/17 - 2/3/17	Power supply pre-purchase advising	1.25		
Steve	2/2/17, 2/6/17	Continued Market Research, set up meeting with Kevin Eliceiri from LOCI	1.5	1.5	2.25
Jenny	2/2/17, 2/6/17	Researched various material coatings and alternative printed materials	1.0	1.75	3.5
	2/7/17, 2/8/17	Tested effect of ethanol on ABS	0.75		
Jack	2/5/17	Basic research, design planning	.25	1.25	3.0
	2/7/17	Continued PCB design/work	1.0		
Peter	2/6/17	Testing CO2 Sensor	.5	2.0	3.75
	2/7/17	Researched CO2 sensor sterilizability	.5		
	2/8/17	Test of CO2 Sensor	1.0		

Team Goals for Next Week

- Meet to discuss redesign and layout of the new enclosure
- Work on the reconfigured circuit integrated with the power supply by next Friday
- Finish the design matrix and work on mid-semester deliverables

Individual Goals

- Trevor: Build and testing of circuitry
- Jenny: work more with modeling software, prepare for new design matrix
- Peter: Come to conclusion on CO2 sensor and test sterilizability for CO2, humidity sensors
- Jack: Now that we have the power supply, work on developing the circuit and enclosure to include the new components
- Steve: Continue market research

Website																
Updates	x	x	x													

Colored boxes are anticipated work. X's indicate progress or completion.

Expenses to date for second semester

- Power Supply: \$30