

**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](mailto:mcginnity@wisc.edu) (Leader)  
Trevor Zarecki – [tzarecki@wisc.edu](mailto:tzarecki@wisc.edu) (BPAG)  
Steven Gock – [gock@wisc.edu](mailto:gock@wisc.edu) (Communicator)  
Jenny Westlund – [jwestlund@wisc.edu](mailto:jwestlund@wisc.edu) (BWIG)  
Peter Hartig – [phartig@wisc.edu](mailto:phartig@wisc.edu) (BSAC)

Progress Report Period: Wednesday, February 15th - Wednesday, February 22nd

### **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 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): Figured out issues with power supply
- Steve (Communicator): Worked on preliminary presentation
- Jenny (BWIG): Edits for preliminary presentation, work on preliminary report draft
- Jack (Leader): Primarily worked on the deliverables, also did some EAGLE design
- Peter (BSAC): Working on preliminary presentation, preliminary report, setting up outreach project and consolidating control system code.

### **Summary of Design Accomplishments:**

## Activities

Person	Date	Activity	Time (hr)	Weekly Total (hrs)	Semester Total
Team	2/15/17	Preliminary presentation meeting and design discussion	1.0	1.0	9.5
Trevor	2/15/17	Got power supply running	0.75	2.25	7.5
	2/20/17	Preliminary Report	1.5		
Steve	2/15/17-2/17/17	Presentation work/edits	1.0	1.0	6.25
Jenny	2/15/17-2/17/17	Preliminary Presentation edits, practice, and update to website	1.0	2.5	7.0
	2/19/17 - 2/21/17	Preliminary Report Drafting	1.5		
Jack	2/15/17-2/20/17	Deliverables preparation and work	3.0	4.0	9.25
	2/21/17	EAGLE circuit work	1.0		
Peter	2/15/17-2/22/17	Preliminary Presentation edits, practice preliminary report preparation	4.0	4.5	9.25
	2/15/17-2/22/17	Outreach logistics and presentation prep	.5		

### Team Goals for Next Week

- Finish the circuit
- Assign new tasks to team members
- Begin working towards new enclosure
- Come up with outreach ideas

### Individual Goals

- Trevor: Get circuit completely running on one microcontroller.
- Jenny: Begin experimenting with incubator layouts and temp distribution using thermal gradient imaging, plan for incubator reprint



Final Report																		
Meetings																		
Team	x	x	x	x	x													
Advisor		x		x														
Client		x																
Website																		
Updates	x	x	x	x	x													

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

**Expenses to date for second semester**

- Multi-Output AC DC Converter: \$28.48
- 15Ohm 2W Resistors (2): \$0.40
- 36Ohm 5W Resistors (2): \$1.12

Total: \$30.00