

Incubator for Infant Wildlife (Wildlife Incubator Team) BME 402

Client: Dr. Mark Stelford

Advisor: Dr. Walter Block

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Date: 3/1-3/7

Problem statement

Wildlife rehabilitation often includes caring for neonatal wildlife who are unable to control their own body temperature, thus the incubator must provide supplemental temperature control. Although private parties frequently contribute to wildlife rehabilitation efforts, they do not have enough financial resources to purchase an incubator. As such the wildlife incubator must be low-cost, durable, modular, easy to clean, and precise in temperature control. It is essential to create an incubator that is more accessible and accommodating for those interested and passionate about wildlife rehabilitation but may lack the financial resources to purchase components currently available in the market.

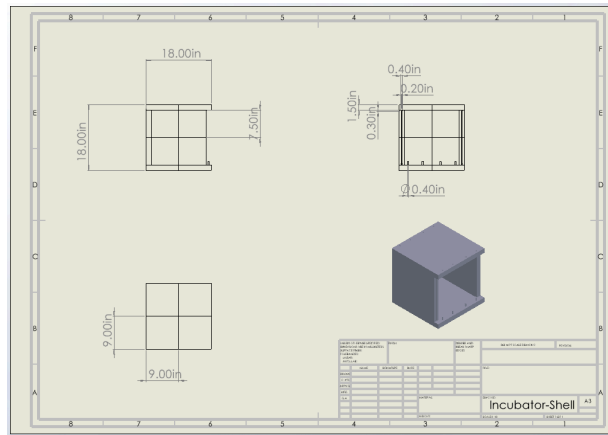
Brief status update

The team has identified key issues in the prototyping process. This includes the PID control system not working with our original circuit. The team found alternative designs that will be put in place in the coming weeks. Additionally, the box's joints were too weak to hold the shell up, so an alternative design is being created with more fortified joints.

Difficulties / advice requests

Getting the PID controller to help decrease oscillations. The code and control theory are proving to be challenging.

Current design



Materials and expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$0.00	

Major team goals for the next week

1. Finalizing the circuit and box and begin testing

Next week's individual goals

- Tanishka:
 - Complete circuit with the new parts that were received and begin gathering data for preliminary testing
- Loukia:
 - Work on finalizing the circuit and exterior portion of the box design
 - Conduct testing
- Sophia:

- Work on finalizing incubator outline
- Conduct testing with circuit and possible incubator shell
- Erwin:
 - Continue work in the MakerSpace to finalize box dimensions
 - Work on circuit and PID control
 - Conduct testing

Timeline

Task	Jan	Feb				March					April				May	
	26	2	9	16	23	1	8	15	22	29	5	12	19	26	3	10
Project R&D																
Designing	X	X	X	X	X	X										
Prototyping																
Testing																
Feedback																
Deliverables																
Progress Reports	X	X	X	X	X	X										
Prelim presentation			X													
Final Poster																
Meetings																
Client																
Advisor	X	X	X	X	X											
Website																
Update	X	X	X	X	X	X										

Filled boxes = projected timeline

X = task was worked on or completed

Previous week's goals and accomplishments

- Team:
 - Coming up with a new circuit and box design
- Tanishka:
 - Ordered and received circuit components for new design
- Loukia:
 - Busy week for me, mainly assisted with project planning and scheduling meetings
- Sophia:
 - Created adjusted box CAD drawing so that laser cutting can be used instead
 - Completed first pass at laser cutter and make adjustments to box dimensions
- Erwin:
 - Worked in the Makerspace to make first prototype box
 - Worked on PID code

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Tanishka Sheth	3/1-3/7	Found different designs and ordered parts for them since original circuit provided wildly incorrect values when integrated with PID control	1	1	11.5
Loukia Agoudemos	2/16-2/22	Journal draft and performed literature review	3	3	9
Erwin Cruz	3/1-3/7	Worked with PID library and box prototyping	3	3	9
Sophia Finn	2/16-2/22	Met with advisor, research Arduino PID libraries, updated website	2	2	10.5