

Heating Pad for MicroPET/CT Scanner

Week: Nov 22nd – Nov 28th

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Team: Justin Schmidt – Team Leader
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Victoria Vasys - BWIG
Eric Bader – BSAC

Problem Statement

During anesthesia metabolism slows down, which can lead to hypothermia and eventual death. For prolonged microPET or microCT scans, where animals are kept for an extended period of time under anesthesia, it is important to keep the animals at steady temperature. Currently heating lights are used to provide that; however they lead to non-uniform and poorly controlled temperature regulation. Therefore, we proposed to design a heating pad that could be used to provide controllable and steady temperature during prolonged scans. Because of the imaging requirements, the heating pad should not contain metal parts.

Last Week's Goals

- Finish putting together the Mouse House
- Make the box for the dimmer switch for the presentation

Accomplishments

- Finished making all the parts for the Mouse House, but still have to glue everything together
- Finished the dimmer box

This Week's Goals

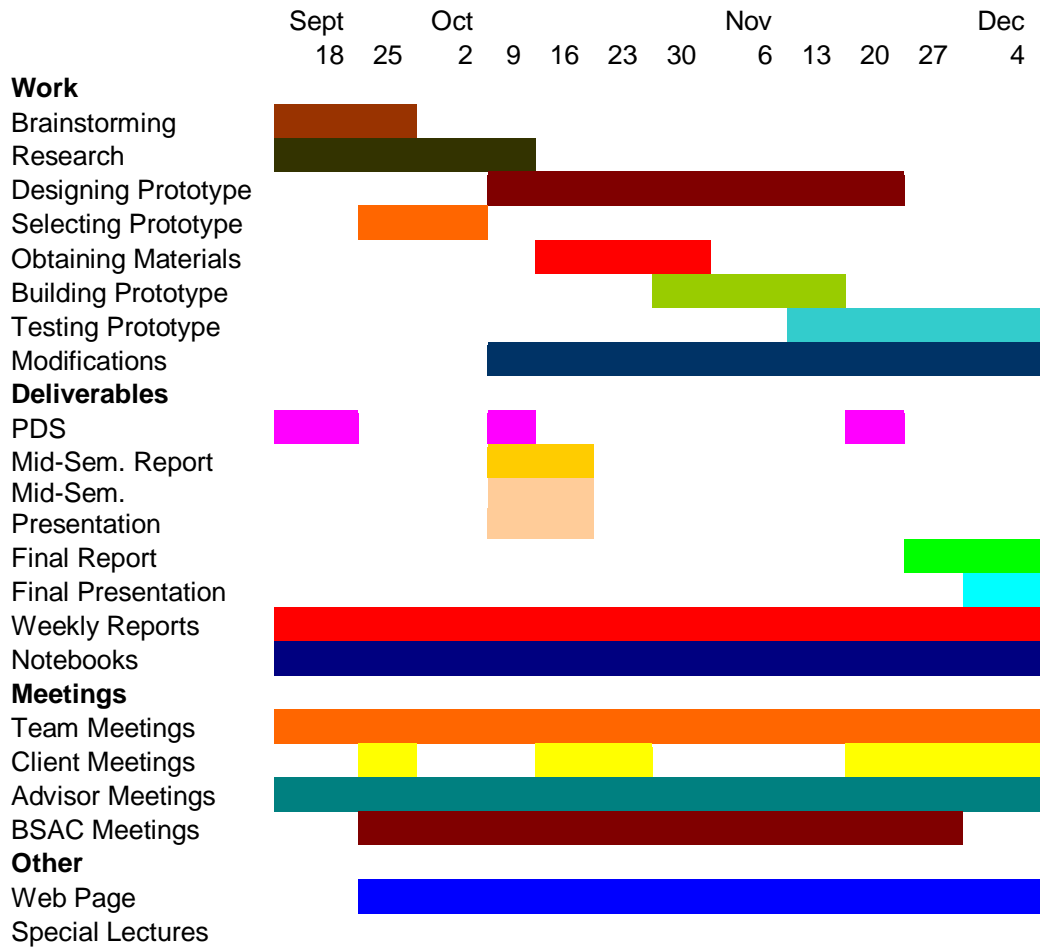
- Fix the heater
- Test the heat output in the upper chamber in the instrumentation room
- Glue all the Mouse House parts together to put the finishing touches on

Difficulties

When we were testing the heat output with all the insulation on, the heater stopped working. We weren't in the instrumentation room so we were not able to test the resistance.

Team Effort

Team Member	Accomplishments	Time (Hrs)	Running Total (Hrs)
Victoria Vasys	Individual Work, Design work	4	39
Eric Bader	Individual Work, Design work	4	39
Eric Printz	Individual Work, Design work	4	39
Justin Schmidt	Individual Work, Bought materials, Design work	4	39



Expenses to Date:

Item	Cost
Plastic Fusion Glue (Home Depot)	\$3.90 + tax
2 PVC Tube Caps (Home Depot)	\$2.40 + tax (for both, \$1.20 each)
2in x 2ft PVC tube (Home Depot)	2.18 + tax
Low Density Polyethylene Sheet (0.09" thick) (SmallParts.com)	\$2.70 + shipping
Low Density Polyethylene Sheet (0.125" thick) (SmallParts.com)	\$3.15 + shipping
Polycarbonate Tubing (1 3/4" Outer Diam., 1/8" Wall, 24" long) (SmallParts.com)	\$13.30 + shipping
Nichrome Wire	\$12.03 (including tax and shipping)
Nuts and Bolts for Heater Construction	\$0.59 + tax
Plastic Tubing	\$5.72 + tax
Tubing Valves	\$0.79 x 7 = \$5.53 + tax
Spring for heater construction	\$0.79 + tax
PVC for test scan	\$3.00
Nylon screws, nuts, and high temperature wire couples (True Value)	\$7.14
Additional tubing valves (Menards)	\$6.66
Fish Tank Air Pump (Pet World Warehouse)	\$33.78
TOTAL-----	\$116.05 (including tax and shipping)