

Heating Pad for MicroPET/CT Scanner

Week: Sept 20th – Sept 26th

Client: Dr. Robert Jeraj
Dept. of Medical Physics
UW Medical School
Phone: 608-263-8619
Cell: 608-345-5378
Email: rjeraj@wisc.edu

Advisor: Dr. Brenda Ogle
2144 Engineering Centers Building
Phone: 608-265-8267
Email: ogle@wisc.edu

Team: Justin Schmidt – Team Leader
Eric Printz – Communications
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

- Start putting together a Design Matrix
- Meet with Mo in the research lab to show Eric and Victoria the machine and get some measurements for the design
- Brainstorm session

Accomplishments

- Started putting together the Design Matrix
- Met with Mo and made sure our design works with the machine and tested tissue densities to make sure design works.

This Week's Goals

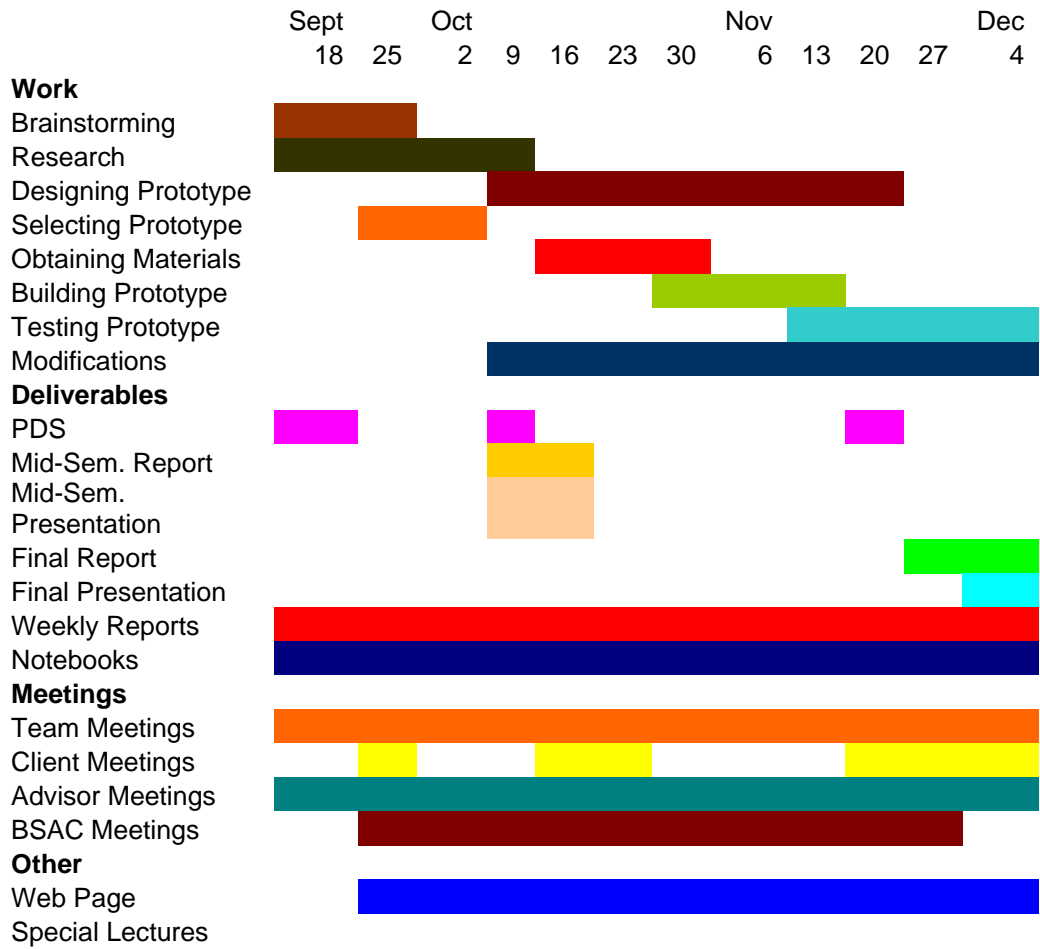
- Find information on different polymers for the platform and tubing and order if possible.
- Begin Solid Works design

Difficulties

No difficulties to note at this point.

Team Effort

Team Member	Accomplishments	Time (Hrs)	Running Total (Hrs)
Victoria Vasys	Individual Work, platform research	4	7
Eric Bader	Individual Work, solid works	4	7
Eric Printz	Individual Work, LA	4	7
Justin Schmidt	Individual Work, Tubing research	4	7



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)