

# Heated Diagnostic Radiology Examination Table

Week 14 – April 24th to May 1st, 2009

## Team Members:

Tyler Vovos ([vovos@wisc.edu](mailto:vovos@wisc.edu)) – Team Leader  
Joseph Labuz ([jlabuz1987@gmail.com](mailto:jlabuz1987@gmail.com)) - BSAC  
Paul Schildgen ([pschildgen@gmail.com](mailto:pschildgen@gmail.com)) - BWIG  
Joel Gaston ([gaston@wisc.edu](mailto:gaston@wisc.edu)) - Team Communicator

## Client:

Lanee MacLean  
Dept. of Family Medicine  
UW School of Medicine and Public Health  
Phone: 845-9531 Ext. 146  
Email: [lanee.maclea@fammed.wisc.edu](mailto:lanee.maclea@fammed.wisc.edu)

## Advisor:

Mitch Tyler  
Phone: 262-5112  
Email: [metyler1@wisc.edu](mailto:metyler1@wisc.edu)

## Problem Statement

A frequent patient complaint is that current x-ray tables are hard and cold. A pad can be used to eliminate the first complaint; however the temperature of the table cannot be altered on standard tables. A heated exam table or attachment that has a temperature control to give patients added comfort during exams, needs to be developed. The materials used need to be radiolucent and may not obscure the body part being imaged. A mechanism must be implemented that eliminates the possibility of patient injury such as burn.

## Last Week's Team Goals

- i. Complete scaled down prototype.
- ii. Complete poster for poster presentation.
- iii. Begin working on final report.
- iv. Prepare notebooks for submission.

## Summary of Accomplishments

- i. As a team we finished the construction of our prototype and tested it's ability to heat the surface. It was discovered that our heating element was not producing adequate heat. We constructed a new prototype with 3 times higher power (300 Watt) to solve this problem. To increase the aesthetics of our prototype we

- constructed a wood box (or housing) for our pump and heating unit. A bubble trap/filling port was added to the design for its suggested purpose.
- ii. The task of creating the poster was divided up among team members. Joel was responsible for most of the text included and the compiling of the poster. Other roles were assigned as follows: Joel – Solid works images; Joey – X Ray testing images, expenses; Paul – Graphs of radiolucency, heating equations; Tyler – Future work research and expenses.
  - iii. Once our poster was compiled we met as a team to finalize it and print it. We then divided the presentation up accordingly: Joel – final design; Tyler – introduction, motivation, expenses and future work; Joey – design criteria and testing results; Paul – Beam intensity loss and background information.

### **This Week's Goals**

- i. Complete final report.
- ii. Prepare notebooks for submission.

### **Project Difficulties**

The polyethylene tubing in our design introduces an unacceptable amount of contrast. We were not able to solve this problem after testing several variations on design. We have researched a suggested alternative material (Gammex Company) and presented the information on this in our report and poster presentation. We have built a scaled down prototype at the suggestion of our client

### **Activities**

4.24.2009	Team: Work on prototype/completed and tested.	4 hours
4.25.2009	Team: Work on prototype (box/new heating element/bubble trap) and tested. Reviewed poster and divided tasks.	4.5 hours
4.28.2009	Team: Reviewed compiled poster before sending to Mitch.	1.5 hours
4.29.2009	Team: Finalized and printed poster, divided presentation.	3.5 hours
4.30.2009	Team: Prepared for poster presentation/prototype setup.	3 hours
4.27.2009	Joel: Prepared compiled poster and solid works images.	5 hours
4.27.2009	Joey: Prepared testing images, and expenses table.	2 hours
4.27.2009	Paul: Prepared radiolucency images and heating eqns.	2 hours
4.30.2009	Paul: Updated website.	.5 hour
4.27.2009	Tyler: Researched future work.	2 hours
4.30.2009	Tyler: Wrote progress report.	1 hour

