Progress Report  
February 16, 2007

**Project Title:** Animal Ventilator

**Team Members:**
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**Advisor:** Willis J. Tompkins

**Date:** 2/16/2007

**Problem Statement:**
Redesign a MRI-compatible small animal ventilator to deliver a variable volume of hyperpolarized helium and oxygen gas at user-specified frequencies. The device should be compatible with the current system in place.

**Restatement of team goals:**
1. Calibrate first generation prototype
2. Finalize design plans for second generation prototype
3. Order parts for second generation prototype
4. Begin construction of second generation prototype
5. Calibration and testing of second prototype
   5.a. Volume output
   5.b. Timing
   5.c. Gas mixture

**Summary of Team Accomplishments:**
1. Almost done with aluminum motor enclosure
2. Worked on aluminum axel
3. More testing of first generation device at Waisman center
Summary of Individual Accomplishment:
1. Matt and Micah went to Waisman for more testing

Statement of Team Goals:
1. Run final testing (for now) on first generation device
2. Wrap-up motor enclosure
3. Machine remaining slider
4. Complete axel
5. Place pieces on the nylon base

Project Schedule:
1/26-2/16 Finish construction of second generation device.
2/17-2/23 Software testing and modifications made
2/24-3/16 Written development of test procedures and securing test equipment and sites
3/17-4/6 Non-animal testing of device
4/7-4/27 Write-up of results, final paper, and poster
5/4 Deliver

Difficulties:
After more testing of the first generation device, there is still a bit of a “phantom breath” not caused by our device. At first it was a cause for concern, but after collaboration with the client, it was discussed that since the problem was present even in the client’s original set up, animal testing can still be done. The volume added is not significant. Focuses for the project (after one last round of LabView alterations on Friday) can now be placed on finishing construction of the second generation device.

Activities:
(Since device delivery)
Chris: 3.0 hrs – team meeting, machining, progress report
Ashley: 3.0 hrs – team meeting, machining, LabVIEW work
Matt: 5.0 hrs – team meeting, SolidWorks preparation, testing at Waisman
Micah: 5.0 hrs - team meeting, machining, calibration work

Team Total Hours for this week: 16 hrs
Cumulative Team Hours for Spring 2007: 50.5 hrs
Cumulative Team Hours to date: 300.5 hrs