Progress Report  
October 19, 2006

**Project Title:** Animal Ventilator

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

**Date:** 10/19/2006

**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. Construct second generation prototype  
4. Calibration and testing of second prototype  
   a. Volume output  
   b. Timing  
   c. Gas mixture

**Summary of Team Accomplishments:**
1. Created a prototype/confirmed design of the new clamping mechanism.  
2. Discussed our design proposals for the new prototype.  
3. Brainstormed ideas on how to make a temporary fix to prevent movement on the old clamp
Summary of Individual Accomplishment:
1. Chris wrote the progress report.
2. Ashley examined LabVIEW code and is currently trying to find a way to insert a pause in the automatic counter to prevent the “oxygen chaser” effect.

Statement of Team Goals:
1. Fix the pneumatic valve timing issue in the LabVIEW code.
2. Develop the chosen design for the new prototype.
3. Finalize Solidworks drawings to prepare for the next parts order.
4. Create mid-semester presentation.

Project Schedule:
9/15-9/29    Finish first device calibration
9/29-10/13   Research and design development of second gen. device
10/13-10/20  Finalization of new design
10/20-11/17  Manufacture of new design elements and device assembly
11/17-11/24  Software modifications
11/24-12/8   Testing and calibration of second device
12/8         Second prototype delivery
12/8         Semester Write-up
12/8         Final Presentation

Difficulties:
Dr. Fain has not been able to get back to us as to his decision as to which of the three second generation design alternatives he would like us to pursue. Once we receive word from him we will quickly put together our parts list and hopefully begin construction after the mid-semester presentations.

Activities:
(Since device delivery)
Chris: 2.5 hrs – team meeting, machining, progress report
Ashley: 2 hrs – team meeting, machining
Matt: 2 hrs – team meeting, machining
Micah: 2 hrs - team meeting, machining

Team Total Hours for this week: 8.5 hrs
Cumulative Team Hours for Fall 2006: 43 hrs
Cumulative Team Hours to date: 189.5 hrs