

**Progress Report**  
December 1, 2006

**Project Title: Animal Ventilator**

**Team Members:**

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**Client:**

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**Advisor:** Willis J. Tompkins

**Date:** 12/01/2006

**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. 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 .Printed out all part drawings
- 2 .Began machining of parts using dimensions from SolidWorks

### **Summary of Individual Accomplishment:**

- 1 .Chris wrote the progress report
- 2 .Matt printed SolidWorks part drawings with dimensions
- 3 .Micah began training of welding techniques
- 4 .Ashley spent time in the Fain lab fixing the software

### **Statement of Team Goals:**

1. Test changes to LabView code on site
2. Finish prototype construction and assembly
3. Prepare final presentation
4. Create and print poster

### **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:**

Finding time to test device in the lab. We will have the hardware by next Friday, however, it may not be possible to pre-test the device or to have a moving prototype at the presentation.

### **Activities:**

#### **(Since device delivery)**

Chris: 5 hrs– team meeting, machining, progress report  
Ashley: 4.0 hrs – team meeting, machining LabVIEW work  
Matt: 4.0 hrs – team meeting, SolidWorks preparation  
Micah: 5 hrs - team meeting, machining, welding training

**Team Total Hours for this week: 18 hrs**

**Cumulative Team Hours for Fall 2006: 103.5 hrs**

**Cumulative Team Hours to date: 250 hrs**