

## Testing System for Pressure Sensitive Cardiovascular Catheter

**Client:** Colette Wagner  
Nancy Sweitzer, M.D., Ph.D.

**Team Members:** Danielle Ebben, team leader  
Anthony Wampole, communications  
Erik Yusko, BWIG  
Anita Zarebi, BSAC

**Date:** *Friday, Nov. 10<sup>th</sup> to Thursday, Nov. 16<sup>th</sup>*

### Problem Statement:

In order to accurately measure internal blood pressures, a properly calibrated pressure sensitive cardiovascular catheter may be used. The current techniques for calibrating the catheter are unreliable, which causes concern about the validity of the test results. The goal of the project is to devise a testing system which more reliably calibrates and verifies the accuracy of the catheter in both atmospheric tests and tests which simulate internal bodily conditions.

### Last Week's Team Goals:

- Decide if the design needs a gas/liquid membrane
- Find an appropriate air pump
- Finalize design
- Begin ordering parts

### Individual Goals:

Danielle: Order materials  
Tony: Get client verification of material  
Erik: Research microprocessors  
Anita: Refresh programming skills

### Summary of Accomplishments:

- Determined that gas/liquid interface is not a concern and we do not need a membrane separating the phases.
- Found several air pumps that could be used for our application.
- Met with Dan Yee and began discussing microprocessor control.
- Decided on a way to mount the catheter in the container.
- Compiled a list of parts, suppliers, and prices for client review.
- Began writing portions of the final paper.

### This Week's Goals:

- Decide on one air pump.
- Order parts.
- Begin construction.

**Project Difficulties:** We have had some trouble finding an air pump that we are sure will fit our application. We now have several options and will choose one very soon.

**Activities:**

Team: Discussed mounting and design dimension, met with Prof. Saupe 5.5 hours  
 Danielle: parts, notebook, final paper, meet Prof. Chesler and Dan Yee 16.5 hours  
 Tony: Notebook, research air pumps, parts 7.5 hours  
 Erik: searching for parts, notebook 13.5 hours  
 Anita: mounting ideas, parts, meet Dan Yee, flash programming 10 hours

**Running Total**

<i>Name</i>	<i>Hours</i>
Danielle Ebben	66
Anthony Wampole	47.5
Erik Yusko	50
Anita Zarebi	43
<b>Team total</b>	<b>206.5</b>

**Project Timeline:**

<i>Week starting:</i>	<i>Accomplishment/Goal</i>	<i>Completed</i>
Sept. 8 <sup>th</sup> , 2006	Assemble team, exchange contact info, establish roles	✓
	Meet with client	✓
	Begin researching topic	✓
Sept. 15 <sup>th</sup> , 2006	Continue research	✓
	start PDS draft	✓
Sept. 22 <sup>nd</sup> , 2006	Finish PDS	✓
	Create list of questions to ask client	✓
Sept. 29 <sup>th</sup> , 2006	Meet with client and Divya Vj	✓
	Brainstorm	✓
Oct. 6 <sup>th</sup> , 2006	Choose three design alternatives	✓
	Split up midsemester presentation	✓
Oct. 13 <sup>th</sup> , 2006	Work on midsemester presentation	✓
	Analyze design alternatives	✓
Oct. 20 <sup>th</sup> , 2006	Discuss design with client	✓
Oct. 27 <sup>th</sup> , 2006	Give midsemester presentation	✓
	Hand in notebooks	✓
	Meet with client to discuss designs	✓
Nov. 3 <sup>rd</sup> , 2006	Search for materials	✓
	Finalize design	✓
Nov. 10 <sup>th</sup> , 2006	Gather materials	✓
	Work on prototype	
Nov. 17 <sup>th</sup> , 2006	Work on prototype	
Nov. 24 <sup>th</sup> , 2006	Finish building prototype	

	Prepare for final presentation	
	Begin final report	
Dec. 8 <sup>th</sup> , 2006	Give final presentation	
Dec. 13 <sup>th</sup> , 2006	Hand in final paper and notebooks	
	Meet with advisor	

**Expenses:** none