

## Testing System for Pressure Sensitive Cardiovascular Catheter

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

**Team Members:** Marty Grasse, Co-Team Leader  
Anthony Wampole, Co-Team Leader  
Erik Yusko, BWIG  
Danielle Ebben, BSAC  
Anita Zarebi, Communications

**Date:** *Friday, Mar. 23<sup>rd</sup>, to Thursday, Mar. 29<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:

- Box Goals:
  - Finish additional support screws
  - Fabricate or order luer lock connector
  - Place catheter fittings
  - Decide on filling port
- Concept map for code
- Order thermocouples or thermistors

### Summary of Accomplishments:

- Ordered samples of luer lock to male threads
- Re-sealed the box with ethylene dichloride
- Found filling port plug
- Finished placing screws in box
- Completed concept map
- Put together preliminary graphic interface for the code
- Received amplifiers
- Found heating pad and power supply

### Activities for Past Week:

Team: Friday team meeting	1 hour
Marty: Concept map, GUI	4.5 hours
Tony: Machining, product research, ordering samples	8 hours
Erik: Parts ordering/research	6 hours
Anita: Concept map, GUI	4.5 hours
Danielle: Machining, product research, annals of BME research	10 hours

**Team Member of the Week:**

**Danielle Ebben**

**This Week's Goals (Spring Break + Following week):**

- Get Samples or make luer to male thread out of aluminum
- Test hospital's heating pad for heat diffusion and heating times
- Code inputs and outputs into program; develop code questions for Dave
- Purchase DIN connector for pressure transducer
- Test instrumentation amplifiers with DAQ oscilloscope program
- Order/drill hole for plug
- Discuss placement for temperature control insertion

**Project Difficulties:** There were no difficulties encountered this week.

**Project Timeline:**

<i>Week starting:</i>	<i>Accomplishment/Goal</i>	<i>Completed</i>
Jan. 26, 2007	Assemble team, establish roles	✓
	Familiarize Marty with project	✓
	Brainstorm ideas to solve previous design problems	✓
Feb. 2, 2007	Finalize solution for leakage and structural integrity	✓
	Brainstorm ideas for computer control and saline heating	✓
Feb. 9, 2007	Machine box to smaller dimensions	✓
	Update PDS	✓
	Test pressure transducer with measuring equipment	✓
Feb. 16, 2007	Purchased parts	✓
	Begin work on proof of concept	✓
Feb. 23, 2007	Machine catheter fittings	✓
	Begin programming for pressure/temperature control	✓
	Continue work on proof of concept	✓
March 2, 2007	Work on prototype	✓
March 9, 2007	Midsemester Presentation/ Outreach to LaFollette High School	✓
March 16, 2007	Work on prototype	✓
March 23, 2007	Work on prototype	✓
March 30, 2007	Work on prototype	✓
April 6, 2007	Spring Break	
April 13, 2007	Work on prototype	
April 20, 2007	Work on prototype	
April 27, 2007	Work on prototype	
May 4, 2007	Final Poster Presentation	
May 9, 2007	Final Report Due	

**Expenses:**

<b>Part</b>	<b>Manufacturer</b>	<b>Part number</b>	<b>Distributor</b>	<b>price</b>	<b>Quantity</b>
<i>Plastic Sheet</i>	<i>McMaster</i>	<i>8560K603</i>	<i>McMaster</i>	<i>\$33.60</i>	<i>1</i>
<i>Latches</i>	<i>McMaster</i>	<i>6082A12</i>	<i>McMaster</i>	<i>\$4.00</i>	<i>6</i>
<i>Plastic tube</i>	<i>McMaster</i>	<i>8532K12</i>	<i>McMaster</i>	<i>\$3.75</i>	<i>1</i>
SwageLok	SwageLok		Badger Fluid Systems	\$8.24	1
RTV Silicone Caulk	McMaster	76435T8	McMaster	\$3.34	1
Vacuum Tubing	McMaster	5173K48	McMaster	\$0.10/ft	2 Feet
Screws			Hardware store	\$3.47	18
Air Pump	Sensodyne		Sensodyne	\$59.00	1

Total: 145.60

Note: Last semester's purchases are in italics.

**Donations:**

Last Semester (Fall 2006):

<b>Part</b>	<b>Supplier</b>	<b>Estimated Price</b>
Pump	Kurt Saupe	\$585.00
Pressure Sensor	Kurt Saupe	\$3000.00