Project Title: An airway pressure device for use in an MRI machine

Team Members:  
Laura Sheehan - Leader  
Jon Cappel – Communications  
Noelle Simatic – BWIG  
Kevin Johnson – BSAC

Client: Victor Haughton, M.D.  
UW Department of Radiology  
3252 Clinical Science Center-E3  
Phone: 263-5306  
email: vmhaughton@facstaff.wisc.edu

Advisor: Mitch Tyler

Date: 10/21/05 – 10/27/05

Problem Statement: Our client Dr. Haughton is currently studying CSF flow during Valsalva maneuvers performed by children with Chiari I malformations. Current research suggests that CSF flow decreases during Valsalva maneuvers in these patients. The airway pressure device would help monitor the exhalation force exerted by each child during a Valsalva maneuver in the MR suite. Knowing the pressure exerted by each patient in the study would be extremely beneficial for data analysis and accuracy.

Last Week’s Goals:  
• Meet with client to discuss Midsemester presentation  
• Obtain client feedback on mouthpiece selection  
• Order parts (transducer, voltage meter, valve)  
• Begin prototyping

Individual Goals:  
Laura – Progress report, contact Matt O’Brien, prototyping  
Jon – Prototyping  
Noelle – Work on project website, prototyping  
Kevin – Prototyping

Summary of Accomplishments:  
• Contacted client to set up a meeting  
• Completed list of parts needed  
• Ordered transducer and transducer connector  
• Contacted Matt O’Brien for balloon valve tips and advice  
• Requested quote for balloon valve

This Week’s Goals:  
• Obtain client feedback
• Order balloon valve
• Begin prototyping

Project Difficulties: None

Activities:
  Laura – Progress report, in-class meeting: 2 hours
  Jon – In-class meeting: 2 hours
  Noelle – Work on project website: 2 hours
  Kevin – In-class meeting: 2 hours

Team Total Hours for this Week: 8 hours

Project Schedule for the Remainder of the Semester:

<table>
<thead>
<tr>
<th>Tasks</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prototyping and Calibrating</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Signal Display Work</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Testing</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>PDS</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Final Poster Presentation</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Meet with Client</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Progress Reports</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Website</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Final Meeting with Advisor</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>