Title: Hydrocephalus Shunt Valve

Names: Emma Alley, Andrew Miller, Karl Fetsch, Catharine Flynn

Date: 2/10/17-2/16/17

Problem Statement: When the heart beats, it approximately moves blood at a rate of 1000 ml/min. Only about 1 ml/min enters the blood brain barrier and is later reabsorbed. For patients with hydrocephalus, the body's ability to reabsorb the fluid is significantly diminished, causing pressure to accumulate in the skull. In order to decrease the intracranial pressure, hydrocephalus patients must have surgery to insert a shunt valve to allow for fluid drainage. The current valves are not without fault, and fail 40% of the time. The goal of this project is to improve upon mechanical shunt valves by incorporating ambient pressure like in US patent 9526879.

Summary of Team Roles and Accomplishments:

- *Emma Alley, Leader*: Set up meeting times and sent out the power point for corrections
- *Andrew Miller, Communicator/BPAG:* Contacted client about coming to design presentation
- *Karl Fetsch, BWIG*: No updates to the webpage were needed this week.
- *Catharine Flynn, BSAC*: BSAC meeting, communicated topics with client and team

Summary of Design Accomplishments: The team has created a design matrix and synthesized a few ideas for how to approach the design.

Activities:

Name	**Total Hours**	**Activities**
Emma Alley	6	2017/02/10 Advisor meeting (30 min) Team meeting (1.5 hr) 2017/02/13Team meeting (2.5 hr) 2017/02/14 Power point (1hr) 2017/02/15 power point (0.5hr)
Andrew Miller	6.5	2017/02/10 Advisor meeting (30 min) Team meeting (1.5 hr) 2017/02/13 Team meeting (2.5 hr) 2017/02/14 Individual work prelim. Presentation (1 hr) 2017/02/13 Read US20040082900 A1 pat. (1 hr)
Karl Fetsch	5.5	2017/02/10Advisor meeting (30 min) Team meeting (1.5 hr) 2017/02/13 Team meeting (2.5 hr) 2017/02/13 Presentation (1hr)
Catherine Flynn	5.5	2017/02/10 Advisor meeting (30

		min) Team meeting (1.5 hr) 2017/02/11 Read ASTM F647-94 (15 min) 2017/02/13 Read ASTM F647-94 (30 min) Team meeting (2.5 hr) Uploaded scans (15 min) Summarized ASTM sections pertinent to the scope of the project (30 min)

Statement of Team Goals: The team is going to finish the preliminary report as well as the preliminary design notebook.

Individual Goals:

- *Emma:* Plan how the team should write the preliminary report for the shunt valve design project.
- *Andrew:* Contact the client about team meetings
- *Karl:* Update the website as necessary
- *Catherine:* Attend BSAC meetings as necessary.

Difficulties: The team couldn't meet at our usually meeting time over the weekend due to schedule conflicts, but we were able to solve the problem by meeting on Monday instead.

Project Schedule/Timeline:

Week (starts on Fridays)	**Goals Before the Start of the Week**
February 24	Submit the preliminary report, notebook, and peer evaluations before 4:00PM Wednesday. Finalize design choice.
March 3	Plan out testing procedures, fabrication procedures, and modeling procedures for our design

Expenses: The team has not made any purchases yet.