

Title: Hydrocephalus Shunt Valve

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

Date: 1/20/17-1/26/17

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 lab archives
- *Andrew Miller, Communicator/BPAG:* Contacted the client to set up the first meeting
- *Karl Fetsch, BWIG:* Created the website and uploaded the team photo
- *Catharine Flynn, BSAC:* N/A

Summary of Design Accomplishments: The team met with the client on January 25th to discuss the directions and expectations for the design projects. Individuals completed their own research and submitted it to lab archives for sharing purposes.

Activities:

Name	Total Hours	Activities
Emma Alley	2	1/24/17 Researched Hydrocephalus and shunt valves to prepare for client meeting (1 hr)

		Client meeting (1 hr)
Andrew Miller	2.5	Client meeting (1 hr) Completed individual research and read patent 9526879 (1.5 hr)
Karl Fetsch	2	1/26/2017 Read US pat. 9526879, shunt ambient short proposal, and reviewed WHP mechanical valve diagram (1hr) Client meeting (1 hr)
Catherine Flynn	2.42	2017/01/22 Read US pat. 007951105 Read Proposal for project Reviewed DOI 10.5603/CJ.2013.0103 Reviewed WHP mechanical valve diagram 2017/01/25 Compiled questions for client (15 min) Client meeting (1 hr)

Statement of Team Goals: The Team is planning on doing an extensive patent search for shunt valves to see what already exists. Research on physiology, intracranial pressure and pressure differences on both sides of the shunt valve, and basic fluid properties of CSF needs to be completed.

Individual Goals:

- Emma: Create a more detailed schedule for the upcoming weeks. Decide with the team how to divide and conquer research topics.
- Andrew: Contact the client about the budget. Contact David A. Watson with details regarding his patent.
- Karl: Update the website as necessary.
- Catharine: Attend BSAC meetings as necessary.

Difficulties: We met with our client on Wednesday the 25th, which prevented us from accomplishing more pertinent research related to the project earlier in the week.

Project Schedule/Timeline:

Week (starts on Fridays)	Goals Before the Start of the Week
February 3	Research physiology and patents, write the PDS
January 10	Continue to research as necessary, Brainstorm ideas, create the design matrix criteria
February	Finalize the ideas, create the design matrix, complete the power point, practice presenting, put power point on the webpage, start the prelim report

Expenses: The team has not made any purchases yet.