

Title: Hydrocephalus Shunt Valve

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

Date: 4/20/17-4/27/17

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
- *Andrew Miller, Communicator/BPAG:* Contacted Professor Towles for testing.
- *Karl Fetsch, BWIG:* No updates to the webpage were needed this week.
- *Catharine Flynn, BSAC:* BSAC meetings as necessary

Summary of Design Accomplishments: The Team has built, tested, and designed the poster for our presentation.

Activities:

Name	Total Hours	Activities
Emma Alley	17	2017/04/21 Design Meeting and testing spring (4hrs) 2017/04/22 Fabrication meeting (5hr) 2017/04/23 Poster making (4hrs) 2017/04/25 Fabrication and testing (3hrs) 2017/04/27 poster work (1hr)
Andrew Miller	20	2017/04/21 Design Meeting and testing spring (4hrs) 2017/04/22 Fabrication meeting (5hr) 2017/04/23 Poster making (3hrs) 2017/04/25 Fabrication and testing (5hrs) 2017/04/26 Testing (3hrs)
Karl Fetsch	16	2017/04/21 Design Meeting and testing spring (4hrs)

		2017/04/22 Fabrication meeting (5hr) 2017/04/23 Poster making (2hrs) 2017/04/25 Fabrication and testing (5hrs)
Catherine Flynn	18.5	2017/04/21 Design Meeting and testing spring (4hrs) 2017/04/22 Fabrication meeting (5hr) 2017/04/23 Poster making (2hrs) 2017/04/25 Fabrication Of part (4.5hrs) 2017/04/26 Coding (3hrs)

Statement of Team Goals: The team to write the paper this weekend.

Individual Goals:

- *Emma:* Plan the tentative schedule for moving forward and schedule meetings
- *Andrew:* Contact the client about team meetings
- *Karl:* Update the website as necessary
- *Catherine:* Attend BSAC meetings as necessary.

Difficulties: The BME design room changed the computer password so we were not able to find the spring constant last Friday.

Project Schedule/Timeline:

Week (starts on Fridays)	Goals
Last Week	Presentation, Paper, and Notebook

Expenses:

Equipment	Price
O-Rings (10)	\$8
UHMWPE rod	\$12.96
Total	\$20.96