

Dynamic Balance Device, BME 200/300

Client: Mr. Daniel Kutschera

Advisor: Dr. James Trevathan

Team: Gabriela Cecon cecon@wisc.edu (Team Leader)

Gracie Hastreiter ghastreiter@wisc.edu (BWIG / BSAC)

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Problem Statement

Many elderly people—especially those who have suffered from strokes—sustain lasting mobility problems as they attempt to recover and return to “everyday” life. Currently, the solutions for physicians to use in addressing this issue are either too expensive to easily acquire, or are inadequate and are too hard to use while giving sufficient attention and support to the patient. The goal of this project is to provide a solution that remedies the issues with current designs at an affordable cost.

Brief Status Update

We had our first online meeting with our client and discussed the product's specifications as well as his preferences and expectations. We put that information together into our Product Design Specifications (PDS) and the next step will be to brainstorm potential design options.

Summary of Weekly Team Member Design Accomplishments

- Team:
 - Met with client and gathered information about what he needs the device to accomplish.
 - Began doing research on patient issues and devices that look to fill a similar purpose.
- Gabriela:
 - Met with the client and took notes on the product specifications
 - Conducted research on post-stroke conditions and current rehabilitation tools

- Worked on the PDS
- Gracie:
 - Researched neurological rehabilitation after patients experience a stroke.
 - Completed the product design specifications document.
 - Began to brainstorm various components of the design.
- Jack:
 - Set up client meeting
 - Met with client and developed a good understanding of current product and what needs to be done to improve the product
 - Researched a current device that is being used to help stroke patients regain balance
- Kyle:
 - Met with client to get a better sense for what the project was going to need to accomplish.
 - Researched the Bioness Integrated Therapy Device, which is a current device being used who's main drawback is expense and ease of use.
 - Worked on PDS

Weekly/Ongoing Difficulties

The main weekly difficulty is trying to find a time when we can visit the hospital in person.

Upcoming Team and Individual Goals

- Team:
 - Get together and start brainstorming/working on a design
 - Continue researching competing designs to see how we can blend the best ideas together
- Gabriela:
 - Do more research on how to best address balance issues with our device
 - Discuss design ideas with the group
- Gracie:
 - Continue researching products that relate to our project
 - Begin to brainstorm ideas for designs
- Jack:
 - Do research on different ways to produce colored light and shapes
 - Continue communicating with our client
- Kyle:
 - Start looking at different design layouts and piecing together a well-balanced framework
 - Look into BlazePods and similar devices for light system.

Project Timeline

Project Goal	Deadline	Team Assigned	Progress	Completed
Preliminary Presentations	Oct 4	All	–	No
Preliminary Deliverables	Oct 9	All	–	No
Show and Tell	Nov 1	All	–	No
Poster Presentations	Dec 6	All	–	No
Final Deliverables	Dec 11	All	–	No

Expenses

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link	
Component 1									
Component 2									
Component 3									
TOTAL:							\$0.00		