

## Smart Walker

**Client:** Mr. Daniel Kutschera

**Advisor:** Prof. Justin Williams

**Team Members:** Nicolas Maldonado, Shreya Venkatesh, Navya Jain, Xicheng Yang

Name	Email	Role
Nicolas Maldonado	namaldonado@wisc.edu	Leader
Shreya Venkatesh	svenkatesh9@wisc.edu	Communicator
Navya Jain	njain52@wisc.edu	BPAG & BWIG
Xicheng Yang	xyang622@wisc.edu	BSAC

### Problem statement:

The client, a physical therapist working in neuro-rehabilitation, has several patients with traumatic brain injury who use walkers as transition devices. He needs a smart walker for his patients that can objectively measure gait speed, distance walked, and the weight/force applied through the walker. Data is required by Medicare to demonstrate progress and efficacy, but can also help improve clinical assessment and motivate patients as they work to reduce device dependence. Currently, quantitative measurements are taken manually, which is time-consuming and incomplete, as there is no way to measure weight-bearing. Two prototypes have been made by modifying an existing walker, but this compromises structural integrity and is not viable for patient testing. The main goal is to develop a safe, attachable assessment device that provides real-time, clinically relevant gait and weight-bearing data for use with standard walkers by clinicians and patients.

### Brief status update:

As a team, we finished updating all aspects of our design notebook and are making small last improvements to our final report.

### Difficulties/advice requests:

Nothing at the moment.

## Major team goals for the next week

1. Final Report
2. Patent Planning
3. Renewal for project next semester

## Next week's individual goals

Navya:

- Work on final report
- Make sure everything is up to date in lab archives
- Patent research

Shreya:

- Complete final report
- Patent process research

Nicolas:

- Complete final report
- Final notebook
- Patent research

Xicheng:

- Final report
- Edit final notebook

## Timeline

Task	January		February				March				April				
	23	29	5	12	19	26	5	12	19	26	2	9	16	23	30
<b>Project R&amp;D</b>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Empathize															
Background...		X	X	X	X	X	X	X	X						
Prototyping							X	X	X	X	X	X	X	X	X
Testings															
<b>Deliverables</b>															
Progress Reports		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Prelim presentation						X									
Final Poster															
<b>Meetings</b>															
Client			X				X								X

Advisor		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Website															
Update	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**Filled boxes** = projected timeline

**X** = task was worked on or completed

## Previous week's goals and accomplishments

Complete poster, update lab archives.

### Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Nicolas Maldonado	28/04/26 29/04/26	Design notebook Final report	1 1.5	2.5	39
Shreya Venkatesh	28/04/26 29/04/26 30/04/26	Update design notebook Design notebook and final report Last minute edits to final report	1 1 0.5	2.5	36
Navya Jain	26/04/26 27/04/26 28/04/26 29/04/25	Lab Archives Client Meeting Lab Archives Final Report	1 0.5 2 1	4.5	38
Xicheng Yang	27/04/26 28/04/26 29/04/26	Client meeting Final notebook Final report	1 1 1	3	

### Current design

No current design to report.

### [Materials and expenses](#)

### Other files

[Product Design Specification](#)

BME Design: 200, 300, 301, 400 and 402

[Design Matrix](#)

[Preliminary Presentation](#)

[Preliminary Report](#)

[Executive Summary](#)

[Final Poster](#)

[Final Report](#)