

Title: Gait Trainer with Treadmill (Step Masters) 200/300

Date: 9/15/2025 - 9/19/2025

Client: Amanda Pajerski

Advisor: Dr. Ashton

Team:

Grace Neuville, Leader, geneuville@wisc.edu

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Problem statement

A woman with a significant mobility impairment due to a seizure disorder requires support while walking because of seizure risks and poor postural strength. She has a Rifton Pacer Gait Trainer which has allowed her to resume walking outdoors; however, it is unsafe to use in winter. It is crucial for her to be able to use the gait trainer for daily walks in order to maintain her muscular strength and mental health. The solution is to design a transfer device that will allow her to use her gait trainer on a Horizon T101 treadmill to give her the opportunity to maintain her muscle conditioning when weather conditions are not favorable. The transfer device will need to allow the gait trainer to be wheeled onto the treadmill and secure the wheels in position so it cannot fall off the side while she's walking. It will need to hold the weight of the gait trainer, the user, and one caregiver, totaling to 173.6 kg. It will need to be easy for caregiving staff to use, taking no more than 5 minutes to assemble, under 22 kg, and have the ability to fold in order to maintain the functionality of her living environment.

Brief status update

The team is continuing to do preliminary research to understand more about the project. This includes research on gait trainers, materials, standards for ramps and treadmills. The first client meeting with the patient's guardians has been scheduled and will allow the team to have more information on what the family wants out of this project and further knowledge of the design specifications. The team finished the first draft of the product design specifications.

Difficulties / advice requests

NA

Current design

NA

Materials and expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$0.00	

Major team goals for the next week

1. As a team, discuss our first rough design ideas and sketches
2. Collaborate to create 3 solid design ideas
3. Create our design matrix and evaluate at least 3 designs based on what is most valuable to our client

Next week's individual goals

- Grace
 - Continue to research different attachment methods that are not c clamps
 - Work on my section of the design matrix
- Sierra
 - Refine preliminary design ideas
 - Complete assigned portion of the design matrix
- Julia
 - Research potential methods of fabrication for our project
 - Brainstorm a design idea for the device
- Sara
 - Work on my section of the design matrix
 - Create design sketches for the device
- Katelynn
 - Work on my section of the design matrix
 - Research different methods to secure the gaitwalker to the device.

Timeline

Task	Sept			Oct						Nov				Dec	
	11	18	25	3	8	10	17	24	31	7	21	20	28	5	10
Project R&D															
Empathize	X	X													
Background...	X	X													
Prototyping															
Testings															
Deliverables															
Progress Reports	X	X													
PDS		X													
Design Matrix															
Prelim Presentation															
Prelim Deliverables															
Show and Tell															
Final Poster															
Final Deliverables															
Meetings															
Client	X	X													
Advisor	X	X													
Website															
Update	X	X													

Filled boxes = projected timeline

X = task was worked on or completed

Previous week's goals and accomplishments

The team conducted preliminary research to understand more about the project on treadmill specifications, portable ramp types, and materials. The first client meeting was held to learn more about the specifications for the project. The team had their first advisor meeting where any questions and concerns were addressed. Such as expectations for the product design specifications document, material options, and progress report suggestions.

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Grace Neuville	9/7/2025	Wrote problem statement	0.5	2	3.5
	9/7/2025	Researched ramp standards	0.5		
	9/7/2025	Worked on timeline	0.5		
	9/8/2025	Researched portable ramp designs	0.5		
	9/16/2025	Worked on my section of the PDS	1.5	1.5	

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Sierra Loosen	9/8/2025	Brainstormed questions for client meeting	0.5	1	4
	9/8/2025	Researched ADA compliant ramp dimensions	0.5		
	9/14/25	Research relating to the importance of physical activity and current designs of portable ramps	1.5	3	
	9/14/25	Completed assigned sections of PDS	1.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Julia Shefchik	9/14/2025	Further research on aluminum as a potential material	1	3.5	4.5
	9/17/2025	Formatted and contributed to the team PDS document	1.5		
	9/17/2025	Researched the treadmill and gait trainer the client uses	.5		
	9/17/2025	Edited the problem statement	.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Sara Mlodik	9/9/2025	Brainstormed/looked over client meeting questions and progress report	.5	1.5	4

	9/11/2025	Analyzed the 2024 project process in the team notebook and found areas for improvement	1		
	9/15/2025	Finished analyzing the 2024 project process and notes and wrote questions for the upcoming client meeting	1	2.5	
	9/14/25	Completed assigned sections of PDS	1.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Katelynn Johnson	9/9/2025	Brainstormed questions for client meetings.	0.5	1.5	5
	9/9/2025	Reviewed previous group's final report and client comments.	0.5		
	9/10/2025	Reviewed BPAG resources and funding options.	0.5		
	9/16/2025	Reviewed NIOSH lifting guidelines and other safety research relating to caregiver safety.	1	3.5	
	9/17/2025	Completed assigned sections of the PDS and Progress Report #2	1		
	9/18/2025	Used information gained from client meetings to brainstorm designs.	1.5		