

Amputee Advanced Donning Device

Client: Mr. Daniel Kutschera

Advisor: John Pucinelli

Team: Carly Villa cpvilla@wisc.edu (Co-Team Leader/ BWIG)

Eleanor Hollander erhollander@wisc.edu (Co-Team Leader/ BWIG)

Ava Hopper aghopper@wisc.edu (BPAG)

Anna van Riessen avanriessen@wisc.edu (Communicator)

Sam Kamin sjkamin@wisc.edu (BSAC)

Date: September 5 - September 11, 2025

Problem Statement:

During rehabilitation, it is critical for amputee patients to wear a specialized compression garment known as a shrinker. A shrinker aims to shape the residual limb in preparation for prosthetic fitting and prevent post-operative complications like swelling and excessive fluid retention. For application of the shrinker, patients currently rely on basic donning tubes, in which the shrinker is stretched over a plastic tube and pulled over the residual limb. Because shrinkers are designed to apply strong, consistent compression, they can be very difficult to stretch over donning tubes. This challenge is especially significant for elderly patients, who may have limited strength, dexterity, or mobility. This project aims to create an advanced donning device that stretches the garment to the desired diameter using electronics, simplifying shrinker application and eliminating the need for the user to manually stretch the garment.

Brief Status Update

This week, the team had their first meeting with each other. After introductions, the team decided upon team roles, took a team photo, and set up the project website. Additionally, the team planned to each conduct some basic background research prior to the first team meeting the following Friday. Finally, a client meeting was held on Wednesday at 5 PM to discuss questions, comments, and concerns relating to the project.

Summary of Weekly Team Member Design Accomplishments

- Team:
 - Establishing team roles
 - Setting up appropriate communication channels
 - Talking about goals, expectations, and concerns with project
 - Prepare for client meeting

- Carly:
 - Prepare relevant topics for client meeting
 - Began background research and research on competing designs
 - Update lab archives
 - Attended client meeting
 - Set up lab archives and group zotero accounts
- Eleanor
 - Conduct background research and gain basic understanding of project topic
 - Create a list of client questions in preparation for client meeting
 - Attended client meeting and discussed project questions, comments, and concerns
- Ava:
 - Do research on background of the project to learn more about the device we will be making
 - Research other products currently on the market
 - Attend meeting with client
 - Take notes on lab archives about pros and cons of other products
- Anna:
 - Communicated with client
 - Set up a meeting with the client
 - Did preliminary research on the subject
- Sam:
 - Completed some basic initial research on shrinker socks themselves, a donning tube on the market, and the process of using a donning tube to apply the shrinker sock
 - Prepared clarifying questions to ask the client
 - Attended client meeting and asked my questions

Difficulties / advice requests

N/A

Upcoming Team and Individual Goals

- Team:
 - Assign different research topics for each team member to investigate
 - Continue to update lab archives
 - Prepare for client meeting
 - Work on PDS
 - Conduct a search for patents, codes, regulations relating to this project
- Carly:
 - Complete PDS
 - Continue researching
 - Update the project website and lab archives accordingly

- Eleanor
 - Conduct further research based upon client meeting
 - Conduct necessary research to complete PDS
 - Complete PDS
- Ava:
 - Research more about our project
 - Look into costs of materials we may be using
 - Complete PDS
- Anna:
 - Continue with individual research
 - Communicate new questions and ideas with client
 - Meet with Dr. P & team
- Sam:
 - Complete more research
 - Research similar devices to see how they function
 - Get info from team meeting I will miss on Friday 9/12

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	

Project Timeline

[illegible]

Deliverables																
Progress Reports																
Prelim presentation						10/3										
Final Poster													12/5			
Meetings																
Client																
Advisor																
Website																
Update																

Dates & Deadlines:

- Product Design Specifications: Friday, September 19th
- Design Matrix Criteria: Friday, September 26th
- Preliminary Presentations: Friday, October 3rd
- Preliminary Report: Wednesday, October 9th
- Show and Tell: Friday, October 31st
- Final Poster Presentations: Friday, December 5th
- Final Deliverables Due: Wednesday, December 10th