

Amputee Advanced Donning Device

Date: 10/2/2026 - 10/8/2026

Client: Dr. Daniel Kutschera

Advisor: Dr. Justin Williams

Team:

Freyja Heggeland - Team Leader (heggeland@wisc.edu)

Adam Bauer - Communicator (abauer24@wisc.edu)

Megan Pearson - BSAC (mepearson4@wisc.edu)

Carl Assmus - BWIG & BPAG (cassmus@wisc.edu)

Problem statement: During physical rehabilitation, it is critical for amputee patients to wear a specialized compression garment known as a shrinker sock. A shrinker sock aims to shape the residual limb in preparation for prosthetic fitting and prevent post-operative complications like swelling and excess fluid retention. To apply the shrinker, patients currently rely on basic donning tubes, where 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 and mechanical means, simplifying shrinker application and eliminating the need for manual user input to stretch the garment.

Brief status update: This week the team worked on constructing the preliminary report and began distributing tasks for beginning fabrication.

Difficulties / advice requests: None to report

Current design:

No current design to display

Materials and expenses

No current materials or expenses to report.

When materials/expenses are reportable, See table below:

Item	Description	Manufac- turer	Mft Pt#	Vend- or	Vend- or Cat #	Date	#	Cost Each	Total	Link
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Materials									

Major team goals for the next week

1. Begin physical fabrication and prototyping

Next week's individual goals

- Freyja Heggeland
 - Begin prototyping and distribute work among team members
- Adam Bauer
 - Begin prototypes
 - Break up project and decide what to work on
- Megan Pearson
 - Start prototyping
- Carl Assmus
 - Begin prototyping
 - Continue research into the existing design

Timeline

Task	Week				Week					Week				Week	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Project R&D															
Empathize	X	X													
Background	X	X	X	X											
Prototyping					X	X									
Testings															
Deliverables															
Progress Reports	X	X	X	X	X	X									
Prelim presentation					X										
Final Poster															
Meetings															
Client	X				X										
Advisor	X	X	X	X	X	X									
Website															
Update	X	X	X	X	X	X									

Filled boxes = projected timeline

X = task was worked on or completed

Previous week's goals and accomplishments

- Freyja Heggeland
 - Wrote report with the rest of the group.
 - Spend time with the group discussing testing logistics for our device.
 - Construct rudimentary prototype after presentation.
- Adam Bauer
 - Finished preliminary report
- Megan Pearson
 - Presented preliminary presentation
 - Summarized project so far in a preliminary report
- Carl Assmus
 - Help to write the preliminary report
 - Gave the preliminary presentation

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Freyja	10/4/2026 10/6/2026 10/7/2026	- Formatting preliminary report - Writing preliminary report - Finishing preliminary report	1 2.5 2	5.5	19
Adam	10/7/2026	- Finished preliminary report	2.5	2.5	11
Megan	10/7/2026	- Worked on preliminary report	2.5	2.5	15.5
Carl	10/2/2026 10/6/2026 10/7/2026	- Gave preliminary Presentation - Worked on the preliminary presentation	1 2	3	15.5