

Project Title: Digital Traction with Finger Sleeves

Date: 9/04/26 - 9/10/26

Client: Mr. Pape Samb (asamb@jamarek.org)
Advisor: Prof. Randolph Ashton (rashton2@wisc.edu)
Co-Team Leader: Amy Dang (adang9@wisc.edu)
Co-Team Leader: Sean Carey (srcarey@wisc.edu)
Communicator: Anshpreet Sohal (sohal2@wisc.edu)
BSAC: Patricia Prakasam (pprakasam@wisc.edu)
BWIG: Henna Razeq (razeq@wisc.edu)
BPAG: Anem Karthik (kanem@wisc.edu)

Problem Statement

The objective of this project is to create a digital traction device using finger traps that precisely pulls the patient's hand, wrist, and forearm into a comfortable, neutral position while holding a stable static load. To be feasible for Idrissa Pouye Hospital, the device must be portable and usable in both the plaster casting room and the operating room. This requires a compact and mobile device that can be transported easily between spaces, provides unobstructed access to the forearm for casting and arthroscopy, and tolerates routine sterilization without loss of function. In addition, the design must be simple enough to fabricate, assemble, and repair using materials and processes available in or near Dakar so that the hospital can maintain a reliable inventory even as individual devices are lost or damaged over time.

Brief Status Update

As of this week, we have all gone through the work from this project's previous team. We have begun to create a list of questions for the client, so that we can build upon the previous team's work. We are looking forward to meeting the client, so that we can begin brainstorming ways to further improve the project to meet their needs.

Weekly/Ongoing Difficulties:

There are no difficulties this week. We have gone through the work of the previous team and are working to set up a meeting with the client for project clarification.

Current Design

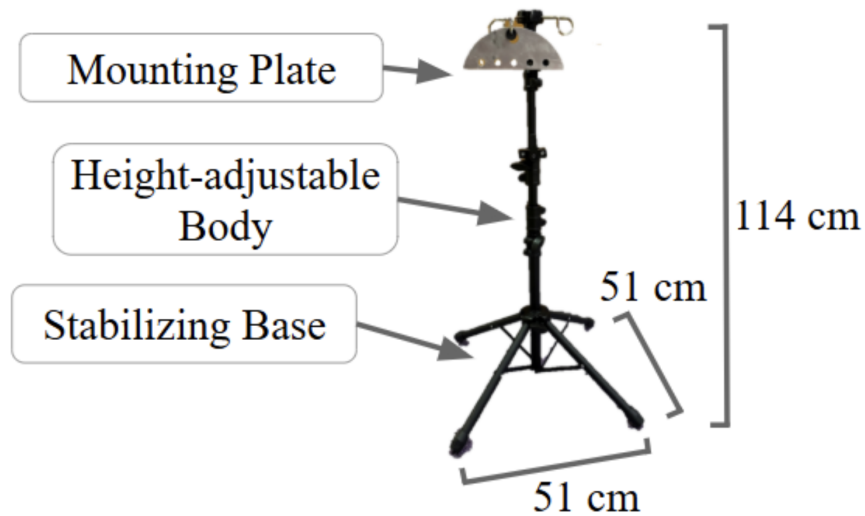


Figure 11: Mechanical Design Final Prototype, displaying stand and mounting plate portions of the design

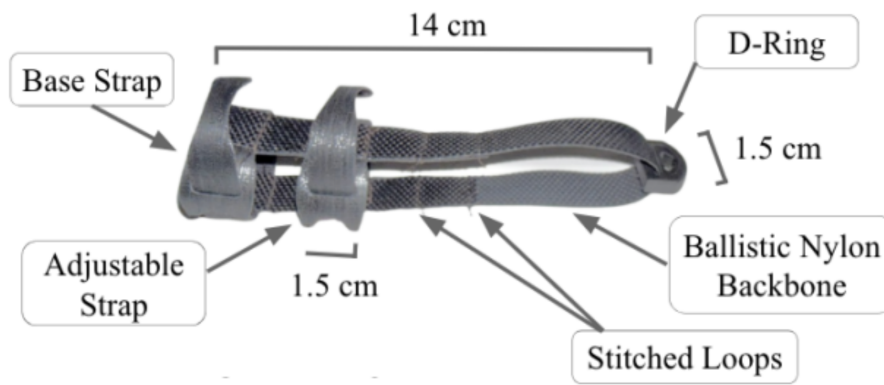


Figure 12: Final finger sleeve prototype

Summary of Weekly Team Member Design Accomplishments

Team: The main team goal for this week was to get everyone acquainted with the project. The previous team made a very good start, so we spent the week going through all of their work and starting to find areas that we need to research and improve upon. We have also sent an email to the client, so that we can set up a meeting to get their input on the direction that they want the project to proceed in.

Individual:

- ❖ Amy Dang:
 - Reviewed Fall 2025 design team work (mainly the final report)
 - Brainstormed questions for the client meeting

- Researched competing traction designs and treatment of hand injuries
- ❖ Sean Carey:
 - Researched and took notes on the previous semesters design ideas, testing, material and fabrication methods, and product design specifications
 - Brainstormed areas in which the previous design could be improved and areas that need more testing
- ❖ Anshpreet Sohal:
 - Sent an introductory email to the client.
 - Researched the benefits of digital traction following surgery and competing designs;
 - Read through the previous team's PDS, preliminary presentation, final poster, and final report.
- ❖ Patricia Prakasam:
 - Emailed BSAC chairs to figure out a solution to missing the 11:00 am meetings on Fridays due to class at the same time.
 - Researched more about wrist arthroscopies and implications that can occur during the surgery with the use of a device.
- ❖ Henna Razeq:
 - Looked at the prior materials and research done from the past year.
 - Looked at databases and did research on the importance of stability during other types of surgery.
- ❖ Karthik Anem:
 - Look through the final report from last year to understand the project.
 - Did research relating to nerve injury concerns from traction and how tractions are used in wrist arthroscopies.

Upcoming Team and Individual Goals:

Team: Our goal as a team this upcoming week is to meet with the client, so that we can get an idea of what kinds of changes they are looking to make to the current design. We are aware of some changes that need to be made based on the previous team's testing, but we would like the input of the client before we start making any design changes.

Individual:

- ❖ Amy Dang:
 - Meet with the client to go over goals for the project
 - Complete assigned section of the PDS
 - Complete further research based on the client's need this semester
- ❖ Sean Carey:
 - Meet with client

- Using input from client, conduct research on ways we need to change the current design
- Complete Product Design Specifications
- ❖ Anshpreet Sohal:
 - Discuss goals with client and mentor
 - Further research the biology of digital traction and look at competing designs
 - Start working on Product Design Specifications
- ❖ Patricia Prakasam:
 - Collaborate with client and mentor to see guidelines of design, and ideas that we would have to incorporate into our prototype.
 - Research about any implications that our products may cause on the human body
- ❖ Henna Razeq:
 - Complete research and incorporate it into the previous research and designs from the year prior.
 - Meet with client and mentor
- ❖ Karthik Anem:
 - Meet with mentor and client
 - Based on information received from mentor and client, create a plan for next steps of the project.

Project Timeline:

Project Goal	Deadline	Team Assigned	Progress	Completed
Product Design Specifications	09/18	All	Not Started	No
Design Matrix	09/25	All	Not Started	No
Preliminary Presentations	10/02	All	Not Started	No
Preliminary Deliverables	10/07	All	Not Started	No
Show and Tell	10/30	All	Not Started	No
Final Presentation	12/04	All	Not Started	No
Final Deliverables	12/09	All	Not Started	No

Timeline

Task	September				October					November				December		
	4	11	18	25	2	9	16	23	30	6	13	20	27	4		
Project R&D																
Research	X	X														
PDS	o	o														
Design Matrix	o	o														
Prototyping	o	o														
Testings	o	o														
Deliverables																
Progress Reports	na	X														
Prelim presentation	o	o														
Final Poster	o	o														
Meetings																
Client	na	o														
Advisor	X	X														
Website																
Update	X	X														

Filled boxes = projected timeline

X = task was worked on or completed – o = Not completed

Expenses

N/A

Activities Time

Team Member	Date	Activity	Time (h)	Weekly Total (h)	Semester Total (h)
Amy Dang	9/8	Review previous semester's work	1.5 hr	4.5 hr	4.5 hr
	9/9	Research	1.5 hr		
	9/9	Team meeting	0.5 hr		
	9/10	Research	1 hr		
Sean Carey	9/7	Review Previous semester work	2 hr	3 hr	3 hr
	9/9	Team meeting and progress report	1 hr		
Anshpreet Sohal	9/9	Team meeting	0.5 hr	3 hr	3 hr
	9/9	Review previous semester work	1.5 hr		
	9/9	Research	0.5 hr		
	9/10	Research	1.0 hr		
Patricia Prakasam	9/9	Team meeting	0.5 hr	3 hr	3 hr
	9/10	Looked over past semester's work	0.5 hr		
	9/10	Research	2 hr		
Henna Razeq	9/9	Reviewed previous semester's work	1 hr	3.5hr	3.5hr
		Researched	2 hr		
		Team meeting	0.5hr		
Karthik Anem	9/8	Reviewed previous semester's work	1 hr	3.5 hr	3.5 hr
	9/9	Research + Team meeting	2.5 hr		