

Project Title: Digital Traction with Finger Sleeves

Date: 9/11/26 - 9/17/26

Client: Mr. Pape Samb (asamb@jamarek.org)
Advisor: Prof. Randolph Ashton (rashton2@wisc.edu)
Co-Team Leader: Amy Dang (adang9@wisc.edu)
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BWIG: Henna Razeq (razeq@wisc.edu)
BPAG: Karthik Anem (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

This week was a big week, where we began creating the PDS and met with the client. We started the PDS using the information from last semester. After getting clarification about the project through the client meeting, we are currently updating the PDS to reflect the updated priorities.

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

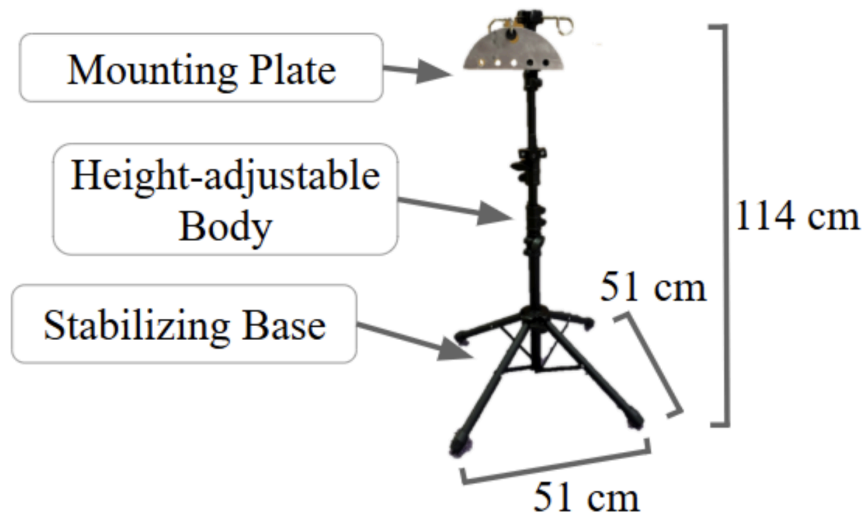


Figure 11: Mechanical Design Final Prototype, displaying stand and mounting plate portions of the design

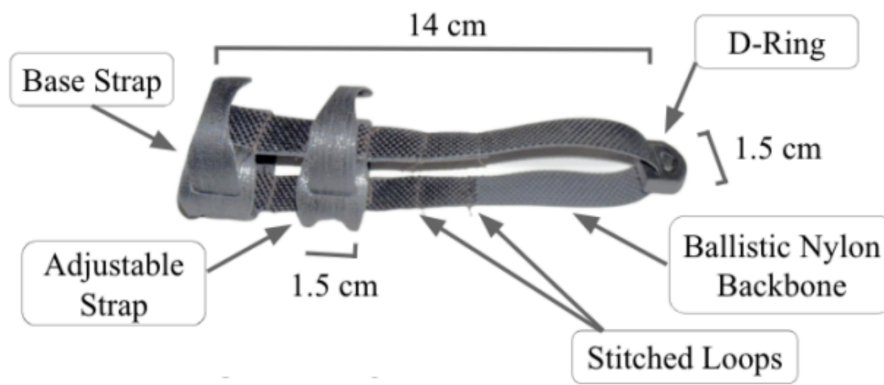


Figure 12: Final finger sleeve prototype

Summary of Weekly Team Member Design Accomplishments

Team: This was a very important week for the team. We met with the client so that we were able to get an idea of what is changing on the product from the previous semester. We used that information along with some additional research that we have been conducting to make the PDS to set goals for our project.

Individual:

- ❖ Amy Dang:
 - Client meeting
 - Worked on section of PDS

- Research operating conditions for hand/wrist procedures and ergonomics associated with it
- ❖ Sean Carey:
 - Researched Standards and Competing designs
 - Worked on PDS
 - Client Meeting
- ❖ Anshpreet Sohal:
 - Corresponded with client to set up client meeting time
 - Worked on PDS
 - Researched complications of wrist arthroscopy and standards for device
- ❖ Patricia Prakasam:
 - Worked on PDS
 - Did research on digital blood flow and ischemia from finger compression
 - Communicated with BSAC chairs about missing last week's meeting
- ❖ Henna Razeq:
 - Client Meeting
 - Researched competing devices and anatomy and physiology
 - Worked on PDS
- ❖ Karthik Anem:
 - Client Meeting
 - Researched the PDS numbers and finished PDS
 - Found more overarching Research

Upcoming Team and Individual Goals:

Team: The goal for this week is to continue researching and begin brainstorming design ideas. After meeting with the client, we have a clearer picture of the goals for this project, which will allow us to focus in on the details for our research. We also know which components of the project we will want to change this semester.

Individual:

- ❖ Amy Dang:
 - Brainstorm new design ideas based on client meeting
 - Work on design matrix
 - Research more competing designs
- ❖ Sean Carey:
 - Begin brainstorming design ideas
 - Create design matrix criteria
 - Research what's possible for us to make
- ❖ Anshpreet Sohal:
 - Brainstorm potential new designs that incorporate client's requirements

- Research material strengths and weaknesses for finger sleeves
- Work on design matrix
- ❖ Patricia Prakasam:
 - Continue to research more about the implications that our digital device can have (i.e. too much force can cause compression, leading to complications)
- ❖ Henna Razeq:
 - Create new ideas based on client meeting/feedback
 - Continue with more research
- ❖ Karthik Anem:
 - Find and design new ideas that help mold the project towards what the client wants after the meeting
 - Research more information
 - Create design matrix

Project Timeline:

Project Goal	Deadline	Team Assigned	Progress	Completed
Product Design Specifications	09/18	All	Started	Yes
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	X													
PDS	o	o	X													
Design Matrix	o	o	o													
Prototyping	o	o	o													
Testings	o	o	o													
Deliverables																
Progress Reports	na	X	X													
Prelim presentation	o	o	o													
Final Poster	o	o	o													
Meetings																
Client	na	o	X													
Advisor	X	X	X													
Website																
Update	X	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	9/16-17 9/17 9/17	PDS Client meeting Research	2 hr 0.5 hr 2 hr	4.5 hr	9 hr
Sean Carey	9/14/26 9/14-17/26 9/16/26 9/16-17/26	Researched Standards PDS Client Meeting Research Traction	1.5 hr 2 hr 1 hr 1 hr	5.5 hr	8.5 hr
Anshpreet Sohal	9/15-9/17 9/16-9/17 9/17	PDS Research Client meeting	1.5 hr 2.5 hr 0.5 hr	4.5 hr	7.5 hr
Patricia Prakasam	9/17 9/17	PDS Personal research	1.5 hr 1 hr	2.5 hr	5.5 hr
Henna Razeq	9/15/26 9/17/26 9/16/26	Research Client meeting PDS	2 hr 1 hr 2 hr		8.5 hr
Karthik Anem	9/15-17/26 9/17/26 9/17/26	PDS Client meeting Research	1 hr 1 hr 2.5 hr	4.5	8 hr