

Project Title: Digital Traction with Finger Sleeves

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)

Date: 9/25/26 - 10/1/26

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 about 1/10th of the patient's weight. 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 device that can be transported easily between spaces and provides unobstructed access to the forearm for casting and arthroscopy. It must tolerate routine sterilization without degradation and maintain its mechanical material properties. 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.

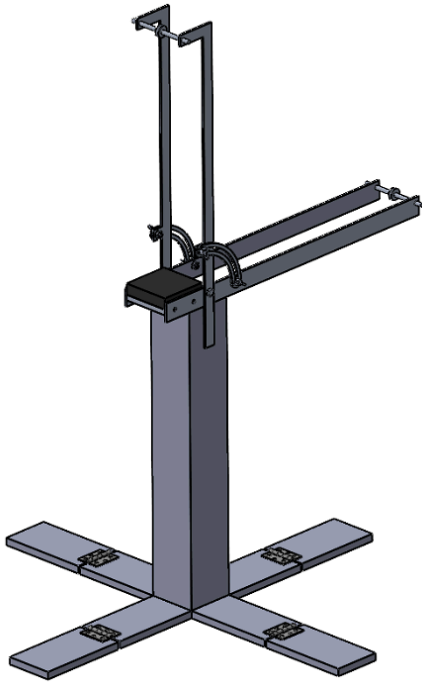
Brief Status Update

This week the team met with the client on Saturday to discuss the budget and design requirements. We learned we have an unlimited budget and that the client is open to buying finger sleeves off of the market. The client clarified with us that the traction device does not need to go into an MRI machine with the patient. Each of us also worked on our section of the preliminary report and practiced presenting together.

Weekly/Ongoing Difficulties:

The client mentioned that they were going to send us a video of an orthopedic procedure using their current traction device, but have not done so yet.

Current Design



Final Preliminary Design: Guillotine Pulley traction mechanism with new base design.

Summary of Weekly Team Member Design Accomplishments

Team: This week the team mainly worked on creating the preliminary presentation and began working on the preliminary report.

Individual:

- ❖ Amy Dang:
 - Completed section of the preliminary presentation
 - Began working on preliminary report
 - Researched finger trap sleeves that the client can buy
- ❖ Sean Carey:
 - Completed preliminary presentation
 - Started the preliminary report
 - Created SolidWorks model for preliminary traction device
- ❖ Anshpreet Sohal:
 - Completed preliminary presentation
 - Created CAD design for the preliminary design for the base of the device
 - Started preliminary report
- ❖ Patricia Prakasam:

- Completed portion of Preliminary Presentation
- Started background on Preliminary Report
- Started final additions of biological and physiological research
- ❖ Henna Razeq:
 - Worked on part of the Preliminary Presentation
 - Edited design for design matrix
 - Researched a couple of competing designs
 - Practiced Preliminary Presentation
- ❖ Karthik Anem:
 - Practiced Preliminary report
 - Filled out preliminary Design
 - Annotated report

Upcoming Team and Individual Goals:

Team: This upcoming week, the team will work on completing the final report.

Individual:

- ❖ Amy Dang:
 - Complete section of the preliminary report
 - Review and edit the report
 - Complete feedback forms
- ❖ Sean Carey:
 - Finish my section of the report and help edit the report
 - Work on improving the design model
 - Complete feedback forms
- ❖ Anshpreet Sohal:
 - Finish my section of the report
 - Edit the report before submission
 - Complete the feedback fruits
- ❖ Patricia Prakasam:
 - Finish portion of Preliminary Report before Wednesday
 - Edit report before submission
 - Complete feedback fruits
- ❖ Henna Razeq:
 - Finish section of Preliminary Report
 - Work on feedback fruits
 - Edit the report
- ❖ Karthik Anem:
 - Finish Preliminary Report section
 - Edit Report

➤ Feedback Fruits

Project Timeline:

Project Goal	Deadline	Team Assigned	Progress	Completed
Product Design Specifications	09/18	All	Started	Yes
Design Matrix	09/25	All	Started	Yes
Preliminary Presentations	10/02	All	Started	Yes
Preliminary Deliverables	10/07	All	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	X	X											
PDS	o	o	X	X	X											
Design Matrix	o	o	o	X	X											
Prototyping	o	o	o	o	o											
Testings	o	o	o	o	o											
Deliverables																
Progress Reports	na	X	X	X	X											
Prelim presentation	o	o	o	X	X											
Final Poster	o	o	o	o	o											
Meetings																
Client	na	o	X	o	X											
Advisor	X	X	X	X	X											
Website																
Update	X	X	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	9/26 9/26 9/30 10/1	Preliminary Report Preliminary Presentation Research Finger Sleeves Practice Preliminary Pres	1 hr 1 hr 1 hr 2 hr	5 hr	24.5 hr
Sean Carey	9/25-26 9/26 9/28-10/1 9/28-10/1	Final Design Modeling Client Meeting Preliminary Report Preliminary Presentation	6 hr 1 hr 1 hr 3 hr	11 hr	31 hr
Anshpreet Sohal	9/26 9/28-30 9/29-30 10/01 10/01	Client Meeting Final Design Modeling Preliminary Presentation Preliminary Pres Practice Preliminary Report	1 hr 8 hr 0.5 hr 2 hr 0.5 hr	12 hr	31 hr
Patricia Prakasam	9/26 9/28-10/1 9/29-10/1 10/1	Client Meeting Preliminary Report Preliminary Presentation Preliminary Presentation Practice	1 hr 1.5 hr 2 hr 2 hr	6.5 hr	23 hr
Henna Razeq	9/27 9/29 9/29-30 10/1	Preliminary Report Research competing designs Preliminary Presentation Practiced Preliminary Presentation	1 hr 1 hr 1 hr 2 hr	5 hr	25 hr
Karthik Anem	9/30 10/1 10/1	Preliminary Report Preliminary Presentation Preliminary Pres. Prac.	1 hr 2 hr 2 hr	5 hr	23.5 hr