

# Title: Progress Report 10

Date: 04/10/2025

Client: Dr. Andrew Ross

Advisor: Dr. Megan McClean

Team:

Student 1: Ana Toscano

Student 2: Rini Anand

Student 3: Gabriela Cecon

Student 4: Sofia Yeates-Delahoz

Problem statement:

Design and develop a prototype that securely supports, stabilizes, and precisely maneuvers needles during image-guided minimally invasive radiology procedures to enhance ergonomics, reduce operator fatigue, and improve accuracy and patient outcomes

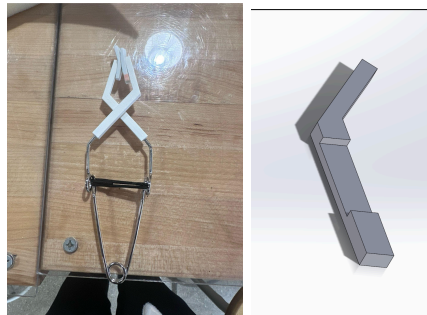
## Brief status update

The team fabricated 3 prototypes and met with the client to gather feedback on the current design.

## Difficulties / advice requests

None to report.

## Current design



A preliminary CAD model was developed with SolidWorks and printed at UW-Madison Makerspace. Then a test tube holder was cut to fit. After that, a hole was drilled into the plastic pieces and hot glued onto the metal. Foam was also hot glued onto the end.

## This Week's Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Ana Toscano	4/03-4/10	Fabricated prototypes Worked on testing plan	2	2	28
Rini Anand	4/03-4/10	Created and extended testing plan Attended client meeting for initial prototype testing	2	2	28
Sofia Yeates-Delahoz	4/03-4/10	Attended meeting with client for initial prototype testing Recorded notes from client meeting and uploaded to LabArchives	2	2	27
Gabriela Cecon	4/03-4/10	Continued writing testing plan Fabricated prototypes Attended meeting with client	3	3	28

## Major team goals for the next week

1. Adjust prototype to covers client's feedback
2. Set up another time to meet with radiologists/ phantom testing again
3. Continue testing
4. Start final deliverables outline

## Next week's individual goals

- Ana Toscano
  - Finish prototyping and fabricating device
  - Work on final poster
- Rini Anand
  - Help fabricate new prototype
  - Email client about meeting time
  - Work on final poster
- Gabriela Cecon
  - Implement changed suggested by the client
  - Finish prototyping and do testing
  - Start working on poster
- Sofia Yeates-Delahoz
  - Help with fabrication of prototype
  - Begin working on final poster
  - Update LabArchives Team Notebook

## Timeline

Task	Jan	Feb				March				April				May	
	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8
<b>R&amp;D</b>															
Preliminary Design	X	X	X	X											
Final Design					X	X									
Prototyping							X	X		X	X				
Testing											X				
<b>Deliverables</b>															
Progress Reports	X	X	X	X	X	X	X	X		X	X				
Prelim presentation				X											
Final Poster															
<b>Meetings</b>															
Team	X	X	X	X	X	X	X	X		X	X				
Client		X			X		X				X				
Advisor	X	X	X	X	X	X	X	X		X					
<b>Website</b>															
Update	X	X	X	X	X	X	X	X		X	X				

## Materials and expenses

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
<b>Category 1</b>										
Needle Holder Jaws	3D-printed PLA needle holder jaws	UW-Madison Makerspace	N/A	N/A	N/A	03/19/2025	2	\$0.28	\$0.57	N/A
Test Tube Clamp	Labs Stoddard Test Tube Clamp, Stainless Steel with Finger Grips, 6" Length	SUCOHANS	SUCOHA NS-TBC-U nique-Ident ifier	N/A	N/A	03/19/2025	10	\$1.43	\$14.28	<a href="https://a.co/d/iC2k5td">https://a.co/d/iC2k5td</a>
Needle Holder Jaws #2	3D-printed PLA needle holder jaws	UW-Madison Makerspace	N/A	N/A	N/A	04/01/2025	6	\$0.12	\$0.73	N/A

Adhesive bumpers	304pcs Adhesive rubber bumpers	ONUEMP	4323 9-160 262	N/A	N/A	04/05/ 2025	3 0 4	\$0.03	\$9.99	<a href="https://a.co/d/43RNYro">https://a.co/d/ 43RNYro</a>
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TOTAL:        \$26.82