

Title: Progress Report 11

Date: 04/17/2025

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

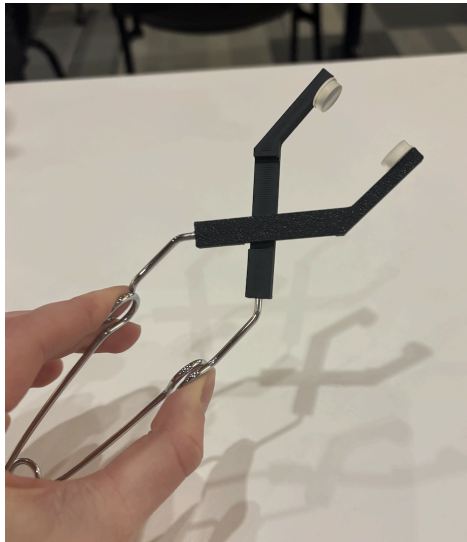
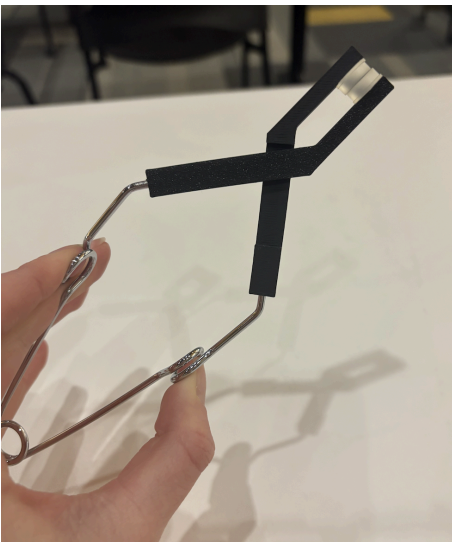
Brief status update

We have finished prototyping our final design for the semester. We will start survey testing on Thursday and complete some statistical analysis from there.

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. The pieces were fitted together and a rubber ending was attached by adhesive.

This Week's Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Ana Toscano	04/11-4/17	Update executive summary Finish Testing Printed final jaws at Makerspace Collaborated on the testing survey	3	3	31
Rini Anand	04/11-4/17	Set up time for testing Fabricated new prototype Made testing survey Worked on Executive summary Worked on final poster section	4	4	32
Sofia Yeates-Delahoz	04/11-4/17	Met with team to discuss final poster Worked on the final poster Modified CAD file and printed final jaws at Makerspace	4	4	31
Gabriela Cecon	04/11-4/17	Met with team to discuss deliverables and poster presentation Finished fabricating prototypes for testing Worked on the final poster	3	3	31

Major team goals for the next week

1. Complete Statistical Analysis
2. Finish Poster
3. Practice Presentation

Next week's individual goals

- Ana Toscano
 - Work on the final poster
 - Work on the final report
 - Complete statistical analysis
- Rini Anand
 - Work on final poster
 - Complete statistical analysis
 - Practice presentation
 - Update Lab Archives
- Gabriela Cecon

- Perform statistical analysis of test results
 - Work on final poster and report
 - Update Lab Archives
- Sofia Yeates-Delahoz
 - Work on the final poster
 - Practice presentation with the team
 - Update LabArchives
 - Complete statistical analysis and survey analysis

Timeline

Task	Jan	Feb				March				April				May	
	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8
R&D															
Preliminary Design	X	X	X	X											
Final Design					X	X									
Prototyping							X	X		X	X	X			
Testing											X	X			
Deliverables															
Progress Reports	X	X	X	X	X	X	X	X		X	X	X			
Prelim presentation				X											
Final Poster															
Meetings															
Team	X	X	X	X	X	X	X	X		X	X	X			
Client		X			X		X				X	X			
Advisor	X	X	X	X	X	X	X	X		X		X			
Website															
Update	X	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
Category 1										
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	SUC OHA NS-T BC-U nique	N/A	N/A	03/19/2025	10	\$1.43	\$14.28	https://a.co/d/iC2k5td

			-Identifier							
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	304	\$0.03	\$9.99	https://a.co/d/43RNYro
Needle Holder Jaws Final Design	3D-oriented PLA needle holder jaws	UW-Madison Makerspace	N/A	N/A	N/A	04/15/2025	12	\$0.11	\$1.31	N/A

TOTAL: \$26.82