Embouchure Assist Device

Date: 11/06/2026-11/12/2026
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Team:
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Problem statement

Facial nerve weakness and palsy can affect many aspects of a patient's daily life, including their ability to maintain an adequate air seal around a musical instrument’s mouthpiece. This creates significant challenges for musicians playing woodwind instruments, such as the oboe. Unlike other woodwind instruments, the oboe uses a unique double reed that is unsupported by a traditional mouthpiece, requiring precise and stable embouchure control. The objective of this project is to develop a tailored device to stabilize the embouchure for individuals with facial nerve weakness.

Brief status update

This week the team altered our design following client testing on Friday. During client testing we identified necessary changes to the clip portion and finalized our plan for the attachment piece. The team delegated these tasks to various team members and began developing testing protocols. In the next week the team will complete the final prototype for final client testing.

Difficulties / advice requests

Is there a storage location for fabrication materials?

Current design

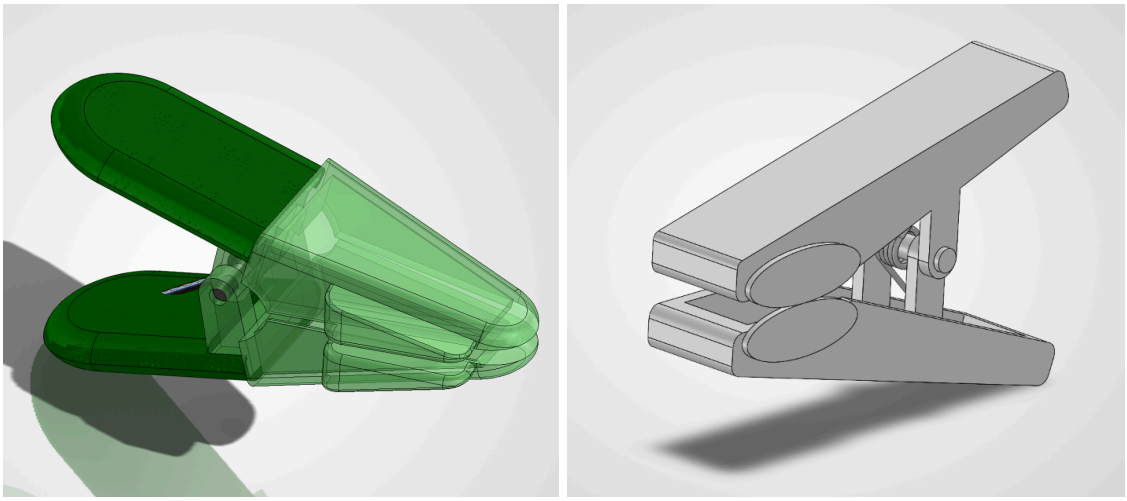


Figure 1: Two potential clip designs

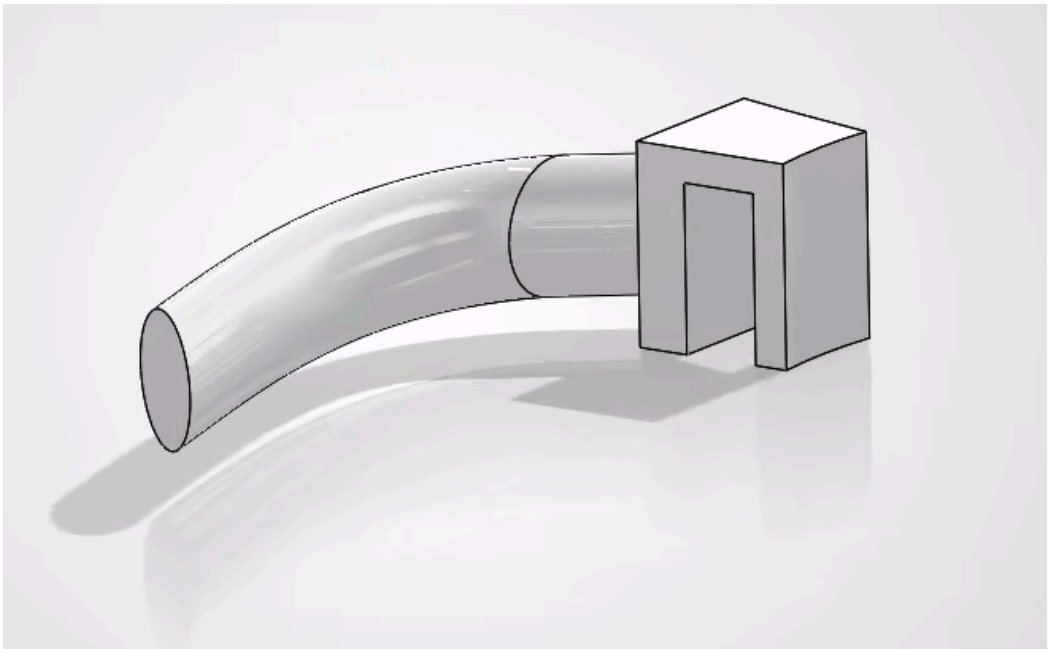


Figure 2: Attachment design

Materials and expenses

Item	Description	Manufac - turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link

Category : 3D Printing + DI Lab										
3-D Print	Force arm prop (TPU)	DI Lab				9/29/2026	1	$0.32	$0.32	
3-D Print	Force arm prop (PLA)	DI Lab				9/30/2026	1	$0.17	$0.17	
3-D Print	Force arm props (PLA)	DI Lab				10/21/2026		$1.30	$1.30	
3-D Print	Force arm props (PLA)	DI Lab				10/23/2026	1	$0.21	$0.21	
3-D Print	Chip-clip prototypes	DI Lab				10/28/2026	1	$0.22	$0.22	
3-D Print	Clip prototypes (2) with ABS	DI Lab				11/04/2026	1	$0.68	$0.68	
Category 2: Online purchases										
Pressure Sensors	Sensor pads	MECCA NIXITY		Amazon		10/03/2026	1	$12.34	$12.34	MECCANIXITY Thin Film Pressure Sensor, FSR406B 20g-10Kg Force Sensing Resistor Stress Test Sensor Pad for Smart Home, Instruments, 2 Pack: Amazon.com: Industrial & Scientific
Silicone	Silicone Sheets	WochiTV		Amazon		10/20/26	1	$22.99	$22.99	https://a.co/d/0i9Sw1t5
Headset	VR headset	KIWI Design		Amazon		10/24/2026	1	$28.99	$28.99	https://a.co/d/00W4wW4t
Torsion springs	Pack of 80 assorted torsion springs			Amazon		10/24/2026	1	$8.29	$8.29	https://a.co/d/00W4wW4t
								TOTAL:	**$75.51**	

Major team goals for the next week

1. Fabrication of headset attachment and clip
2. Solidify final testing plans

Next week's individual goals

- Anna
  - Re-print new headset attachment
  - Begin final prototype fabrication
- Caden
  - Prototype alternate headset attachment design
  - Final prototype fabrication
  - Prepare for final testing plans
- Celia
  - Finalize testing protocol in prep for final testing
  - Delegate testing plans to team
  - Aid in final prototype fabrication
- Erika

    - Finalize clip size, shape, and attachment point alterations
    - Final prototype fabrication
- Owen
    - Begin prototype fabrication
    - Focus more on testing of materials
- Owynn
    - Finish the CAD model for chip clip based off client feedback
    - Final prototype fabrication

Timeline

Task	September				October				November				December	
	7	14	21	28	5	12	19	26	2	9	16	23	1	7
Project R&D														
Empathize	X	X												
Background	X	X	X	X										
Prototyping			X	X	X	X	X	X	X	X				
Testing					X				X	X				
Deliverables														
Progress Reports	X	X	X	X	X	X	X	X	X	X				
Prelim presentation				X										
Final Poster														
Meetings														
Client		X			X		X		X					
Advisor	X	X		X	X	X	X			X				
Website														
Update	X	X	X	X	X	X	X	X	X	X				

Filled boxes = projected timeline
X = task was worked on or completed

Previous week's goals and accomplishments

- Anna
    - Alter headset attachment with client feedback
    - Begin fabrication
- Caden
    - Work on testing
    - Prepare to meet with client

- Celia
    - Plan final testing metrics
- Erika
    - Alter clip design according to client feedback
- Owen
    - Decide on and start fabrication of headband
- Owynn
    - Edit final chip design CAD file

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Anna van Riessen	11/6	Client meeting Headset attachment CAD	1 1.5	2.5	33
Caden Kleepsies	11/6 11/12	Client Meeting Headset CAD	1 2	3	27.5
Celia Oslakovic	11/6 11/9 11/10	Client testing Testing research Draft testing protocol	1 0.5 1	2	27
Erika Daniels	11/6/2026 11/12/2026	Conducted client testing Documented desired clip changes following client testing and drafted sketches	1 0.5	1.5	31
Owen Johnson	11/6 11/9	Client meeting Research fabrication materials	1 .5	1.5	26
Owynn Garrelts	11/12/2026	Edit chip clip CAD model	.5	.5	28