

Embouchure Assist Device

Date: 9/11/2026-9/17/2026

Client: Linda Chickering - lindabhat@gmail.com

Advisor: Dr. William Murphy - wlmurphy@ortho.wisc.edu

Team:

Team Leader: Erika Daniels - emdaniels2@wisc.edu

Team Leader: Anna van Riessen - avanriessen@wisc.edu

Communicator: Celia Oslakovic - oslakovic@wisc.edu

BPAG: Owen Johnson - otjohnson2@wisc.edu

BSAC: Caden Kleespies - ckleespies@wisc.edu

BWIG: Owynn Garrelts - garrelts@wisc.edu

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 worked on developing our Product Design Specifications, also included in this communication. We researched existing designs and anatomy to inform our designs. Additionally, we held our first client meeting where we planned client meetings and communication for the semester and learned our client's requirements.

Difficulties / advice requests

Current design

Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
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Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL:	\$0.00	

Major team goals for the next week

1. Develop initial design ideas
2. Evaluate designs in a design matrix

Next week's individual goals

- Anna
 - Draw three design ideas
 - Assist in creating the design matrix
 - Continue research
- Caden
 - Brainstorm design ideas
 - Contribute to design matrix
 - Continue research
- Celia
 - Develop initial design ideas
 - Evaluate designs via design matrix
 - Broaden research scope
- Erika
 - Brainstorm design ideas
 - Complete a design matrix for ideas
 - Continue researching test methods
- Owen
 - Continue research
 - Brainstorm materials
 - Brainstorm design ideas
- Owynn
 - Brainstorm designs
 - Conduct research
 - Construct a design matrix
 - Start thinking about how we could test designs in the future

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												
Prototyping														
Testings														
Deliverables														
Progress Reports	X	X												
Prelim presentation														
Final Poster														
Meetings														
Client		X												
Advisor	X	X												
Website														
Update	X	X												

Filled boxes = projected timeline

X = task was worked on or completed

Previous week's goals and accomplishments

- Anna
 - Prepared for initial client meeting
 - Conducted research
 - Worked on PDS
 - Started brainstorming design solutions
- Caden
 - Continued research
 - Worked on PDS
 - BSAC meeting
 - Client meeting
 - Conducted research
- Celia
 - Further researched competing designs and testing
 - Completed Product Design Specifications
 - Maintained communication with our client
- Erika

- Completed Product Design Specifications
- Further researched client's physiology
- Client meeting
- Owen
 - Conducted research
 - Worked on PDS
 - Set up budget tracking spreadsheet
- Owynn
 - Worked on Product Design Specifications
 - Conducted research
 - Added Progress Report and PDS to website

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Anna van Riessen	9/11/2026	Client Meeting	0.5	3.5	6.5
	9/13/2026	Continued research	1		
	9/15/2026	My section of the PDS	2		
Caden Kleepsies	9/11/2026	Client Meeting	0.5	3.5	6
		BSAC Meeting	1		
	9/15/2026	Completed PDS sections and Researched competing designs	1 1		
Celia Oslakovic	9/11/2026	Client Meeting	0.5	3	6.5
	9/15/12026	PDS Sections	2		
		Researched face orthotics and dynamic splints	0.5		
Erika Daniels	9/11/2026	Client meeting	0.5	4	7
	9/13/2026	Researched facial paralysis	1		
	9/15/2026	PDS research and work	2.5		
Owen Johnson	9/16/2026	Research Materials and fabrication	2	3	4
	9/16/2026	Completed PDS section	1		
Owynn Garrelts	9/11/2026	Client meeting	0.5	3.5	6
	9/15/26	Research on the cancer she had in her parotid gland and the nerves connected to the parotid gland	2		
	9/16/26	Completed PDS sections	1		