Title: Reusable 3D pelvic floor teaching model for layered construction activities (Super-Models) 200/300

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

Client: Kelsey Henriquez
Advisor: Prof. David Dean
Team:
- Katherine Ahlquist (kahlquist@wisc.edu) - Co-Team Leader
- Sara Mlodik (mlodik@wisc.edu) - Co-Team Leader
- Mina Hawkins (mjhawkins@wisc.edu) - Communicator
- Abigayle Chapman (akchapman2@wisc.edu) - BWIG
- Hiba Shah (hashah2@wisc.edu) - BPAG
- Karen Pisano (kpisano@wisc.edu) - BSAC

Problem statement

The Physician Assistant anatomy curriculum currently has a pelvic floor anatomy workshop that uses a 2-dimensional paper template of the bony pelvis, on which PA students build pelvic floor musculature and tissues using colored Play-Doh. While the activity promotes hands-on learning, the 2D model does not adequately allow students to develop the three-dimensional spatial relationships required for future clinical practice. The client needs a classroom set of pelvic outlet models that accurately represent the normal adult pelvic anatomy, including anatomical landmarks for muscle and ligament attachment, that can serve as a stable scaffold for students to build pelvic floor musculature. It should be durable enough for repeated classroom use, easy to assemble and store, and allow Play-Doh or another inexpensive modeling material to be adhered and removed without causing residue or degradation.

Brief status update

The team met with our client and advisor this week. The client shared product requirements and the materials, including anatomy and the workshop presented to the students. The team has met to brainstorm the next general direction the design should go towards, landing on 3D printing. The team met with the advisor Dean introducing the project and gaining guidance for the fabrication approach. We have completed the Product Design Specifications (PDS).

Difficulties / advice requests

N/A

Current design

N/A

Materials and expenses

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

Major team goals for the next week

1. Read the resources given by the client and complete the workshop the model is intended for.
2. Complete the Product Design Specifications (PDS).
3. Continue research on anatomy and fabrication methods.
4. Discuss design ideas with the team to decide on the top 3 design options.

Next week's individual goals

- Katherine
    - Complete assigned sections of the PDS.
    - Watch the lectures for the pelvis and perineum provided by the client, take notes and consider the relevant parts for the model.
    - Draft a design idea based on the lecture materials. Record in lab notebook.
- Sara
    - Explore what 3D printing materials the Maker Space offers and research their properties in terms of hardness, porosity, and cost
    - Sketch ideas for the design that involves a way to attach a membrane to the pelvis
    - Research materials that could be used for the sacrotuberous ligaments and pelvic membrane
- Mina
    - Complete another research entry focusing on the anatomy included in the pelvic floor workshop.
    - Touch base with the 3D printing lab and discuss possible filament possibilities that take into account the material research located in the PDS.
    - Revise assigned section of the PDS.
- Abigayle
    - Research potential play-doh alternatives or adhesive methods to limit potential slipping/sagging of play-doh during the molding and construction process.
    - Research relevant possible cleaning methods for the models to avoid residue and staining from construction materials.
    - Research material options for the sacrotuberous ligaments and diaphragm.
    - Discuss preliminary design ideas with the team, and choose or formulate the optimal idea to proceed with.
- Hiba
    - Draft 3 design ideas and record them in the lab notebook
    - Research different material options through the 3D printing services
    - Finalize a prototype with team
- Karen

Timeline

Task	Sept			Oct					Nov				Dec	
	11	18	25	2	9	16	23	30	6	13	20	27	4	13
Project R&D														
Empathize	x	x												
Background…	x	x												
Prototyping														
Testings														
Deliverables														
Progress Reports	x	x												
PDS		x												
Design Matrix														
Prelim Presentation														
Prelim Deliverables														
Show and Tell														
Final Poster														
Final Deliverables														
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

- Meet with the client to better understand requirements and design specifications.
- Meet with advisor for introductions and fabrication guidance.
- Begin research on Pelvic Anatomy.

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Katherine	9/13	Created Progress report 2; updating the document with the team's status	.50 hr	3.25	4.25 hr
	9/14	Additional optional client requests - review meeting notes and reported any optional but useful elements to the design	.25 hr		
	9/14	Competition - researched current methods of teaching the pelvic anatomy and reported cost, pros, and cons of the products on the market.	.75 hr		
	9/14	References – read through the current report and highlighted anywhere that needed a source.	.25 hr		
	9/17	Watched the Pelvis lecture material for the workshop and took notes. I considered what will be included in the model and what the students will make themselves.	.75 hr		
	9/17	Watched the Perineum Lecture material and took notes. This one was very helpful outlining the bones and the pelvic diaphragm. I now have some ideas for the design of the model.	.75 hr		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Sara	9/12	Created a Design Project Deadlines document to keep the team on an organized timeline	0.25	2.25	4.5 hr
	9/13	PDS Problem Statement - Updated the problem statement to align with information gained the recent client meeting	0.5		
	9/13	PDS Client requirements - Reviewed and itemized the client's needs for the design	0.5		
	9/13	PDS Performance requirements - Summarized the durability and usage demanded on the pelvic models when in classroom use	0.5		
	9/16	Reviewed and edited the final PDS draft	0.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Abigayle	9/12	Wrote PDS sections, researched minor details to support writing	1	5.5	7.5 hr
	9/13	Researched typical pelvic dimensions, derived reasonable unisex dimensions from estimated middle of the range	.5		
	9/13	Researched tissue properties of the sacrotuberous ligaments and diaphragm we aim to construct on the model.	.5		
	9/13	Developed a detailed drawing of a first iteration of model, including details about textures, dimensions, and muscle placement locations	1.5		
	9/13	Briefly explored current learning plan used in the anatomy classroom	.5		
	9/13	Revised PDS sections	.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Mina	9/15	Conducted research on materials, aesthetics, and appearance of the model, then completed my assigned section of the PDS.	1.5	2	4.25 hr
	9/15	Looked over the pelvic floor modeling workshop with the resources provided by the client.	0.5		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Hiba	09/15	Did the weight, size, ergonomics and operating conditions section of the PDS	.75	2.75	4.25
	09/15	Explored the current learning plan shared by client to get familiar with the anatomy of pelvis	1		
	09/17	Brainstormed initial design ideas	1		

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Karen	9/13	Submitted my contribution to our PDS draft. Familiarized myself with the current anatomy workshop.	.5	.5	2