

# tricia sada

Product Designer



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# projects

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## Mind Reader

Scope is a wireless EEG brain scanner and brain research platform that will enable UCLA doctors to understand the brain on a new level.



## Skeletal Skates

What if we could empower a new generation of women through modernizing the roller derby skate to reflect its modern athletic status.



## Future of Pregnancy

Luv is a communication system that helps parents stay connected to their unborn baby in a future of artificial wombs



## Epson Rebrand

This explores a new reality for Epson as Color for Creatives, rather than just a printer & ink company.

# mind reader

## Scope | Wireless EEG

This was a group project sponsored by VentureWell and UCLA CNSI doctors to design next level EEG brain scanner hardware and a brain research platform for their new EEG technology

### Skills

Physical Prototyping,  
UX Research, Strategy

### Time

14 Weeks  
2017

### Team

Noel Ekker - Product  
Pooja Nair - Interaction  
Diana Chong - Graphic

### Role

Physical Hardware Prototyping  
& UX Strategy: Solving for the  
hardware problem of total  
adjustability on the head



# SCOPE



UCLA



VENTUREWELL™  
idea to impact



# problem with tethered EEG

Current EEGs can only be used in the lab and tethered to a machine, making it difficult to research long term brain activity for seizures and stroke.





# solutions for wireless EEG

A wireless EEG can be worn away from the lab. So we need to find solutions for a discreet EEG that:

- + Can be worn in public
- + Easy to put on and take off
- + Adjusts to ensure electrodes make contact with scalp on different head shapes

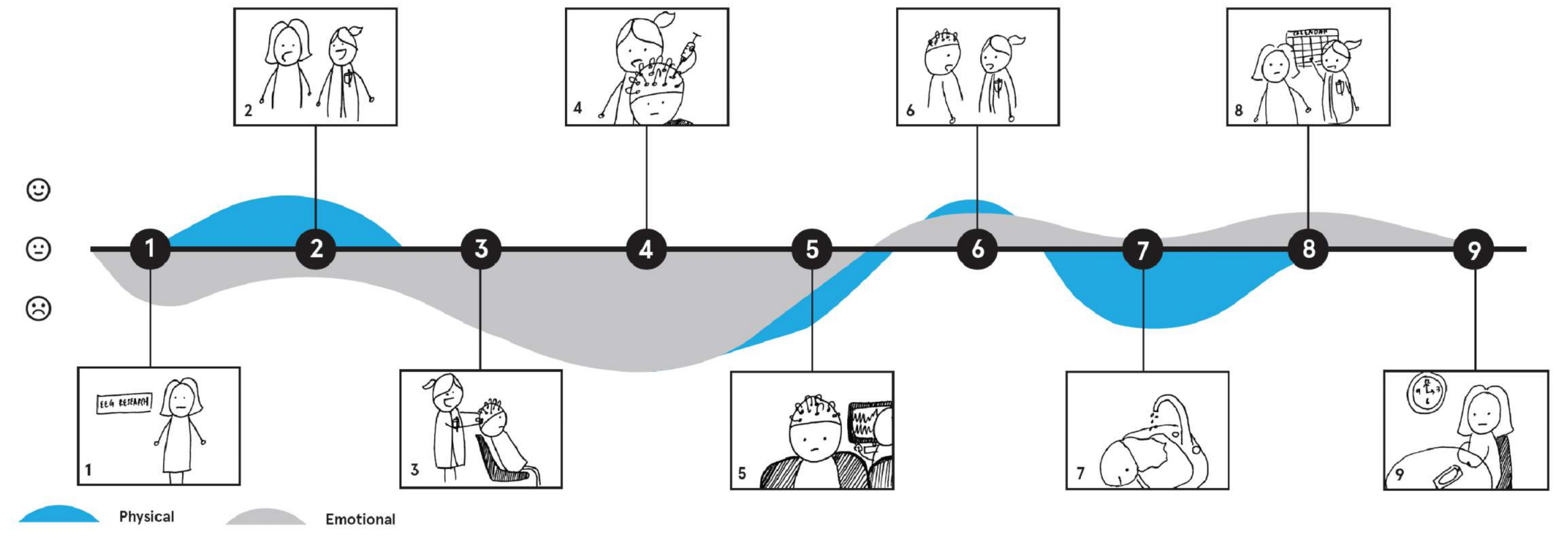




# Understanding user pain points

We learned that EEG users need a [socially acceptable wearable EEG](#) that is [easy to put on and take off](#).

## Journey Map: EEG Wearer



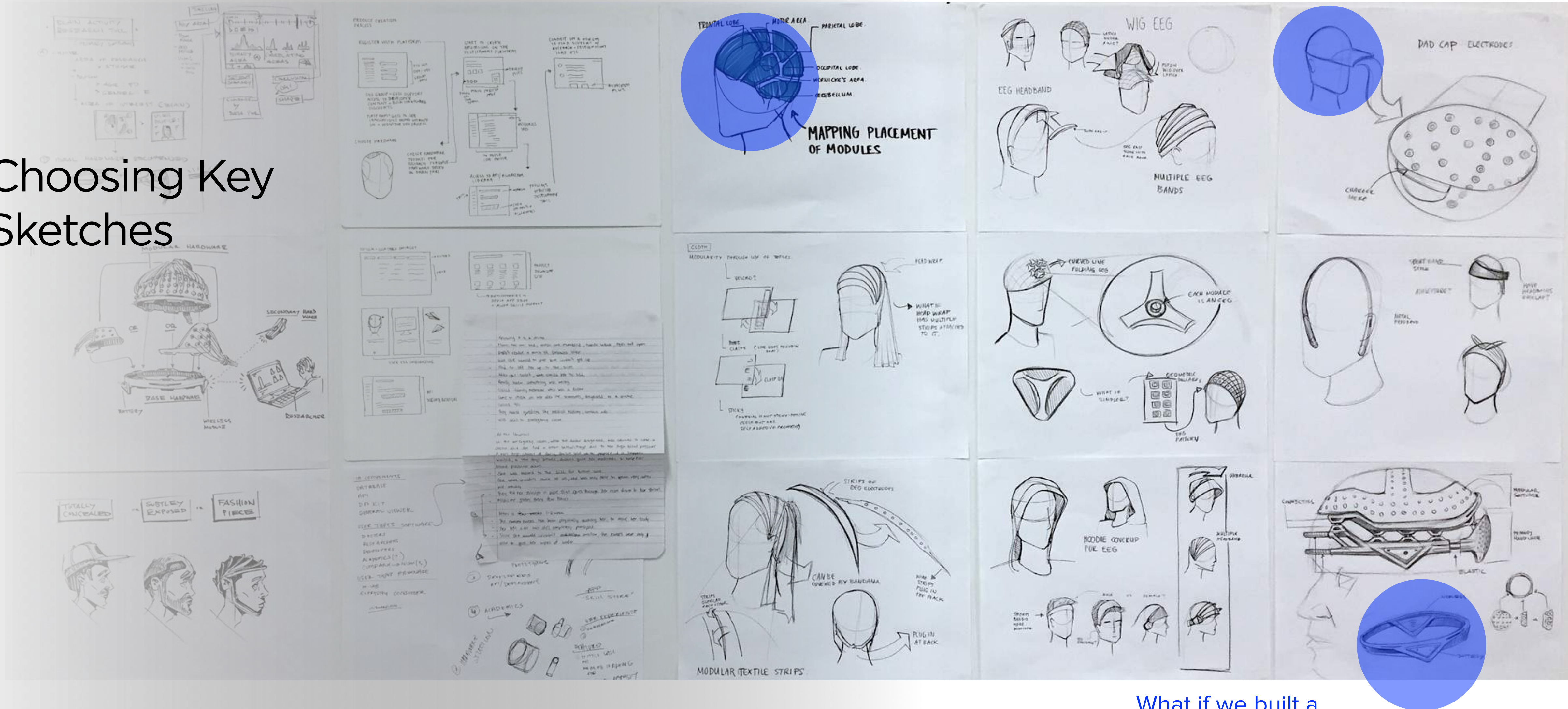
- 1** Angela enters the EEG research facility.  
Hospital setting is cold and Angela intimidated by the process, deviation from normal schedule.  
☹️ ☹️
- 2** Angela and the technician have a conversation about the procedures that are about to take place.  
She feels reassured and relieved from the doctors explanations but still stress about what the results will be, uncomfortable with unknown  
☹️ 😊
- 3** Angela sits in the assigned seat and the chair reclines backwards and the EEG equipment is placed on her head.  
She feels discomfort and feels awkward because of this strange device on her head. The device tugs on her head, she feels minor uncomfortable adjustments, feels tensions in her neck.  
☹️ ☹️
- 4** The technician takes out needles filled with gel. This gel is squirted onto the parts of her scalp where the electrodes will make contact to facilitate conductivity.  
She feels slight anxiety from needles with gel. Physically, it feels weird having the gel contact her scalp, she still remains a little tense.  
☹️ ☹️
- 5** The technician sits across from her, calibrating the equipment while monitoring the screen, which is facing away from her. Angela's only understanding of what is happening is based on what the researcher voluntarily explains to her, and his body language.  
Patient feels isolated, worried and uneasy about what the researcher is saying however is curious about what this device is learning from her brain  
☹️ ☹️
- 6** After the research has been conducted, the technician voluntarily explains to her in layman terms what the results are.  
She is fascinated by how the device on her head could show all this information and feels reassured in the validity of the technology for an accurate diagnosis  
She is confused on the technicalities of what the researcher is saying, and embarrassment for asking the researcher to repeat or explain what they are saying  
☹️ ☹️
- 7** She then proceeds to take a shower to wash out the conductive gel in her hair  
She is relieved that the process is over  
She is uncomfortable having to bend hair and wash hair inside of a sink.  
☹️ 😊
- 8** She gets ready to leave and consults with her doctor one more time on a follow-up date that will be listed with better results  
She feels accomplished and relieved the process is over  
She is however uneasy about what further information will arise from the research evaluations  
😊 😊
- 9** She goes back to her place that she is staying (hospital or home), and waits and wonders when the results will come  
☹️ ☹️



What if we map modules based on lobe placement?

Integrated into baseball cap?

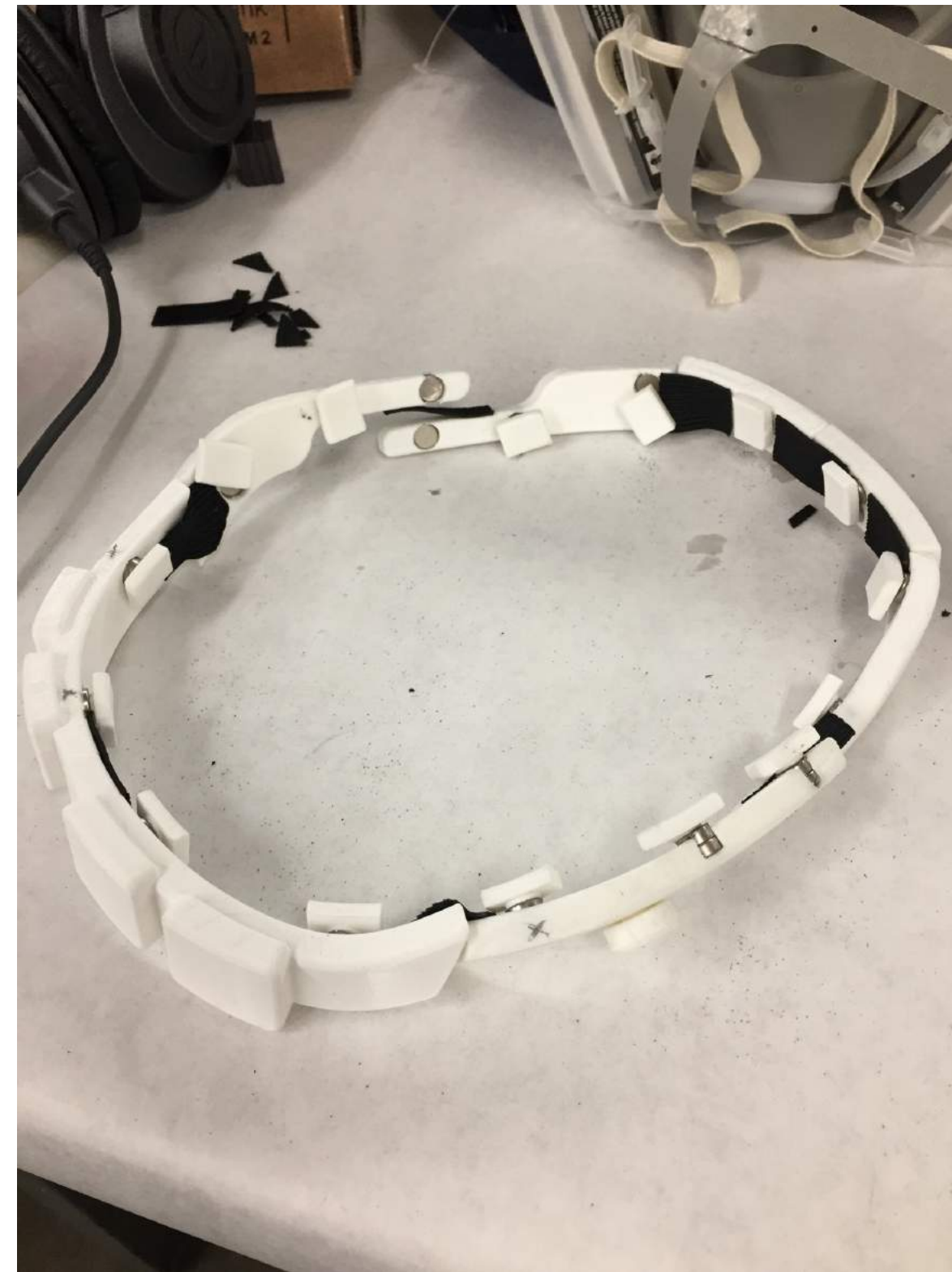
# Choosing Key Sketches



What if we built a skeleton framework?



# Learning through Prototyping



We tested different tightening mechanisms to ensure electrode to skin contact



# Decisions through Prototyping



We chose to go with a band that goes around the head to secure EEG



We curved the bank to allow for more EEG placement

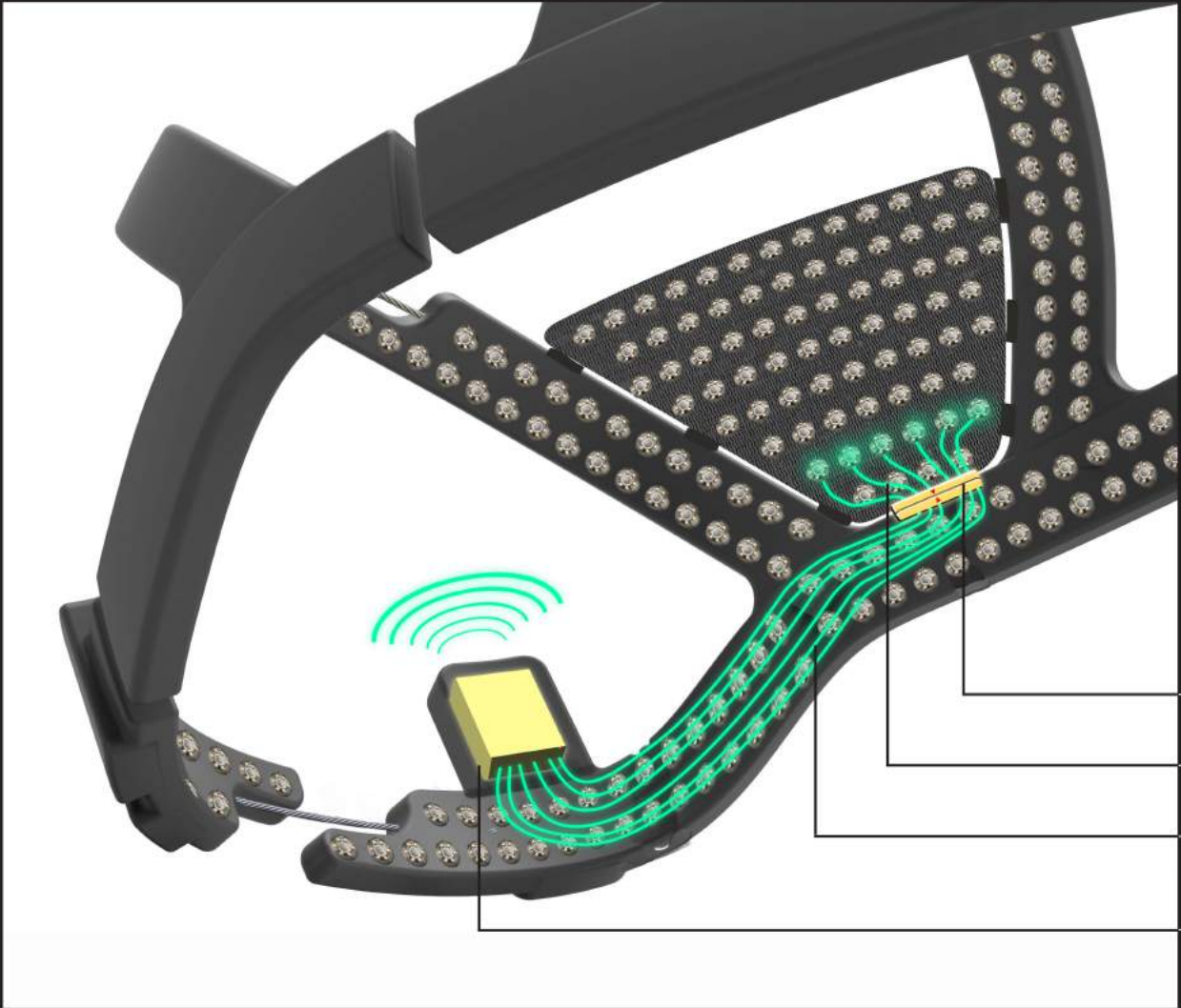


We decided on a skeletal framework with patches that ensure electrode contact



# first refinement

Over-engineered?  
What if soft materials can create compression for electrode skin contact instead of complicated hardware mechanisms?



## Electrode Signal to Amp Transmitter via Plugs

Electrodes send analog signals to plugs through in-panel knit circuits, and then along wires embedded in TPU frame.

Panel-to-Frame Plug

In-Panel Knit Circuit

In-Frame Wires

Wireless Transmitter/ Amplifier/ Analog to Digital Converter

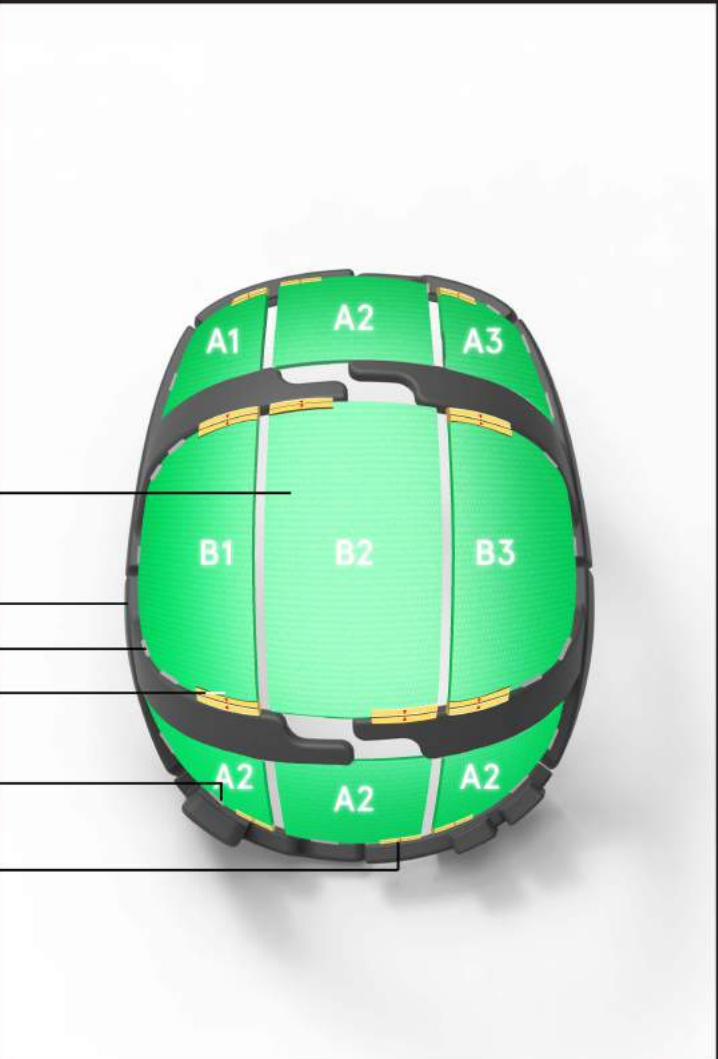
## 9-Panel Modular System

4 Way Stretch Material

Panels attach to frame with electrode-wire plugs to and positioning clips.

Positioning Clips

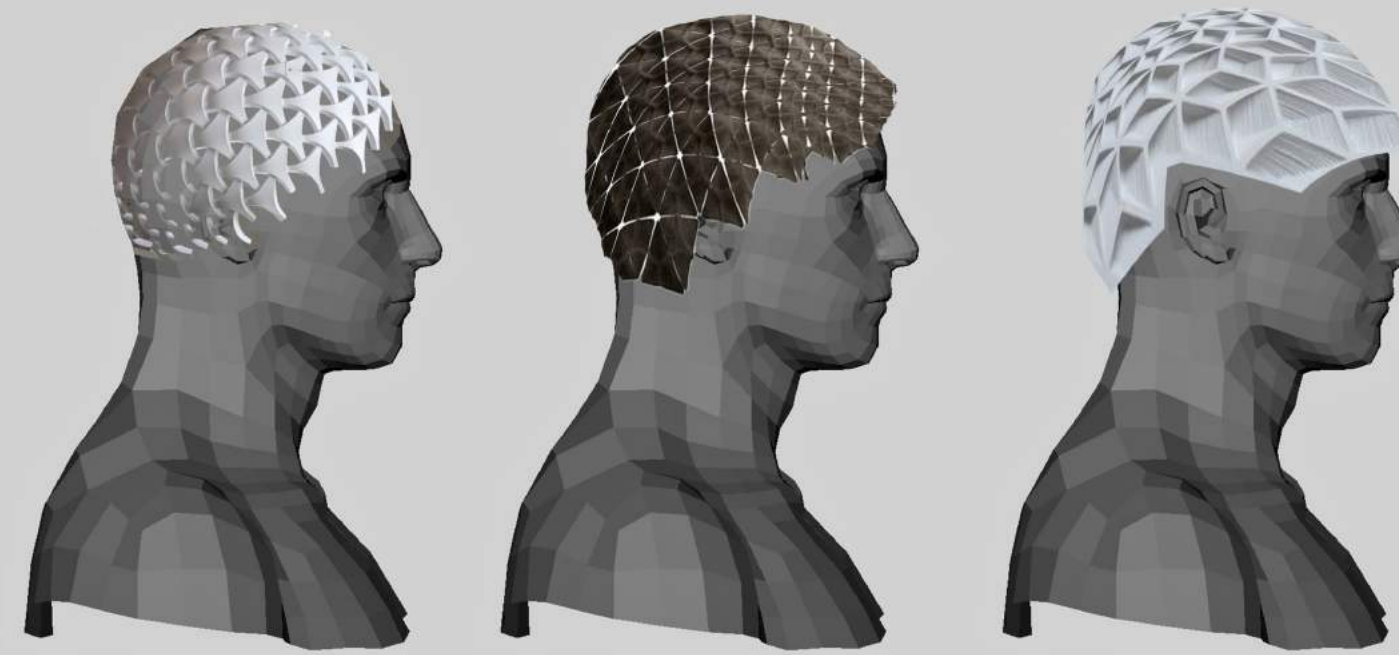
Electrode-Wire plugs



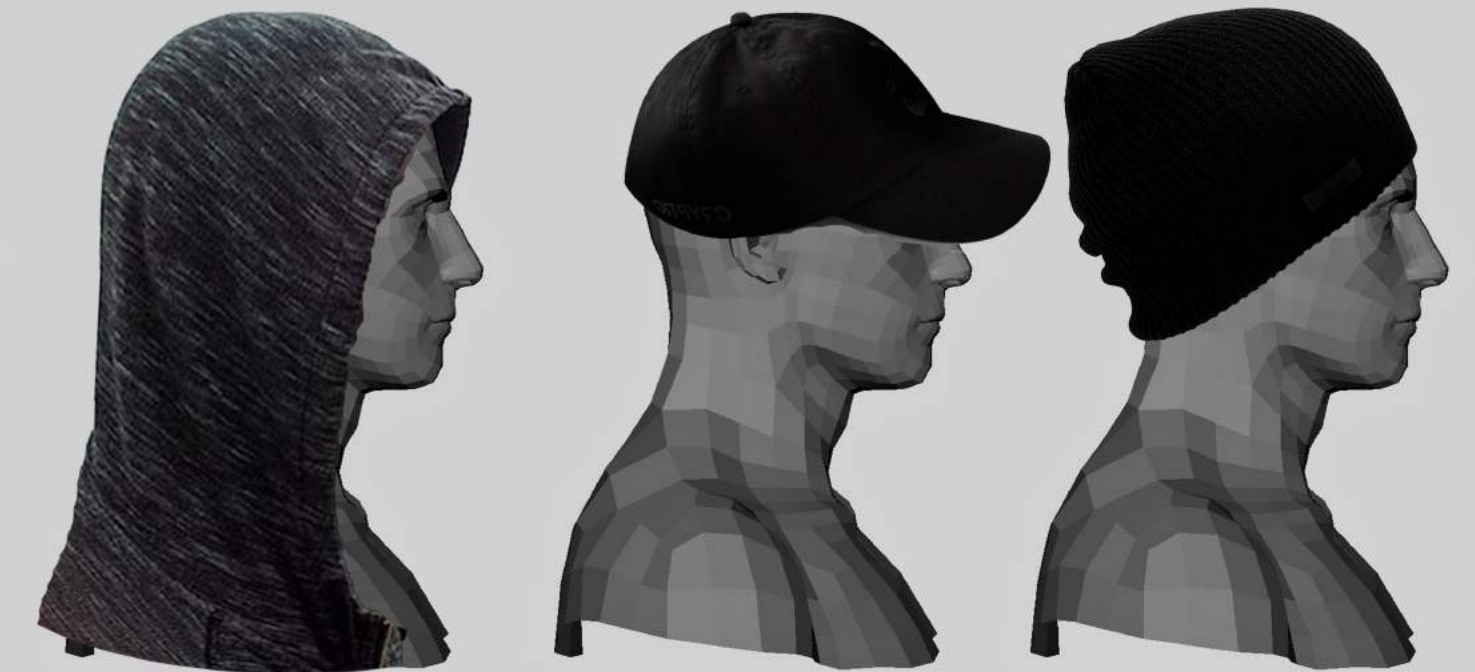


# Experimental Ideation to Push

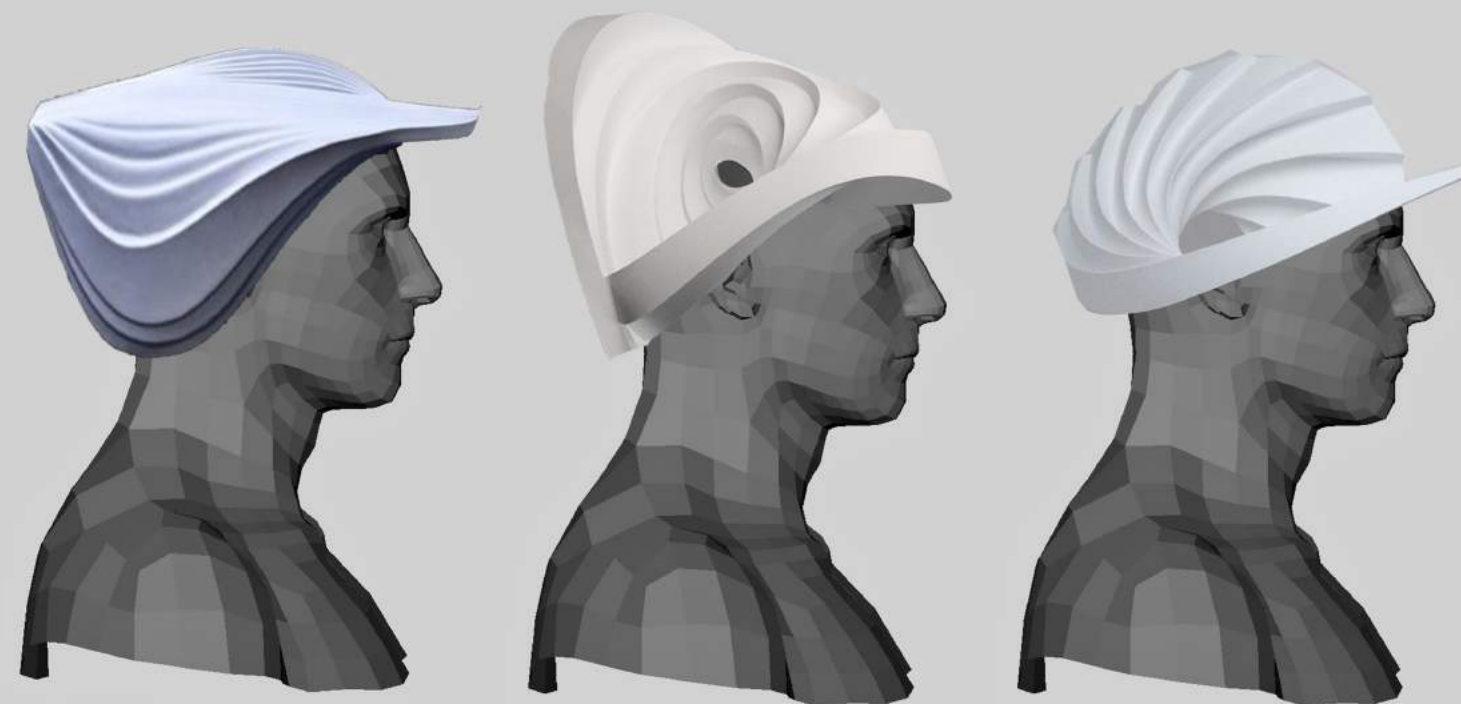
We broke our normal process and explore found objects to find creative solutions, leading us to find wig caps as the key solution to compression.



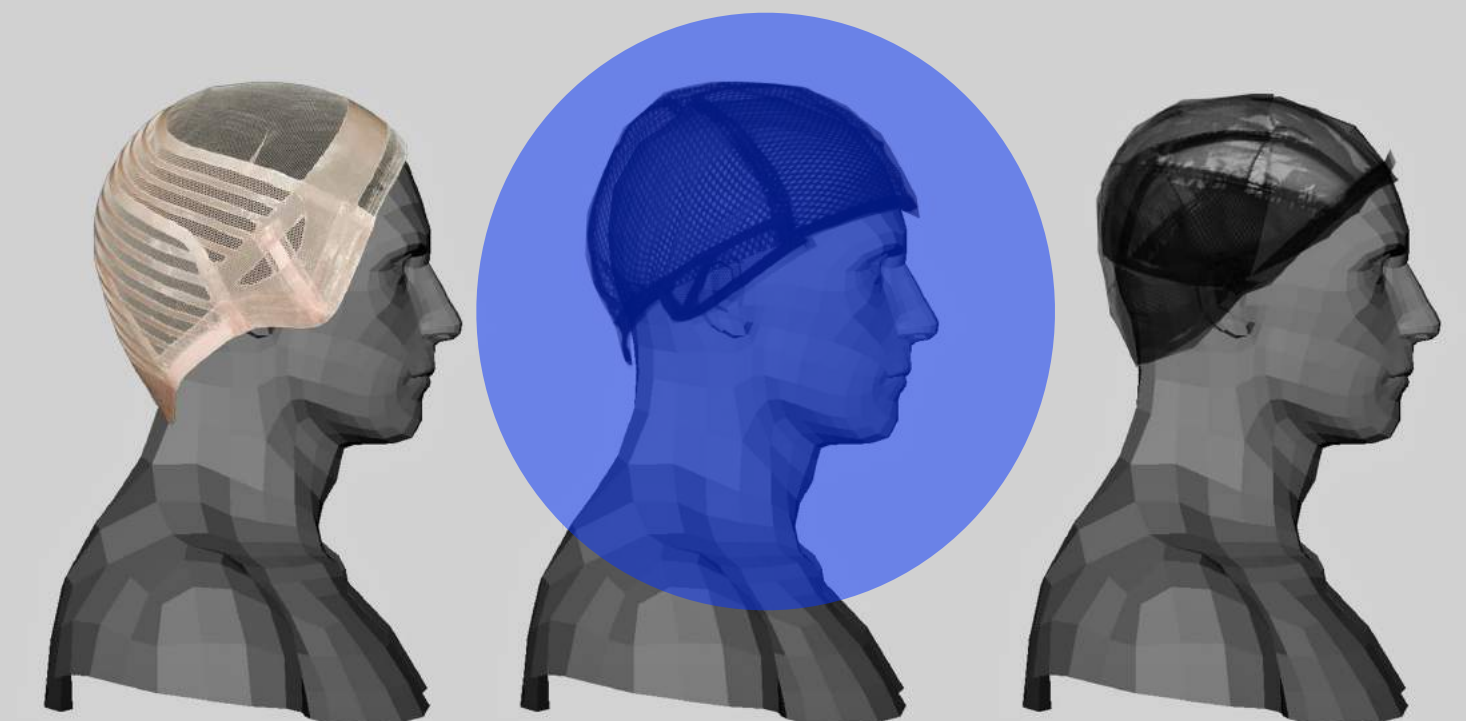
modular. origami. multifaceted.



fully concealed EEG.



parametric. hardware. statement piece.

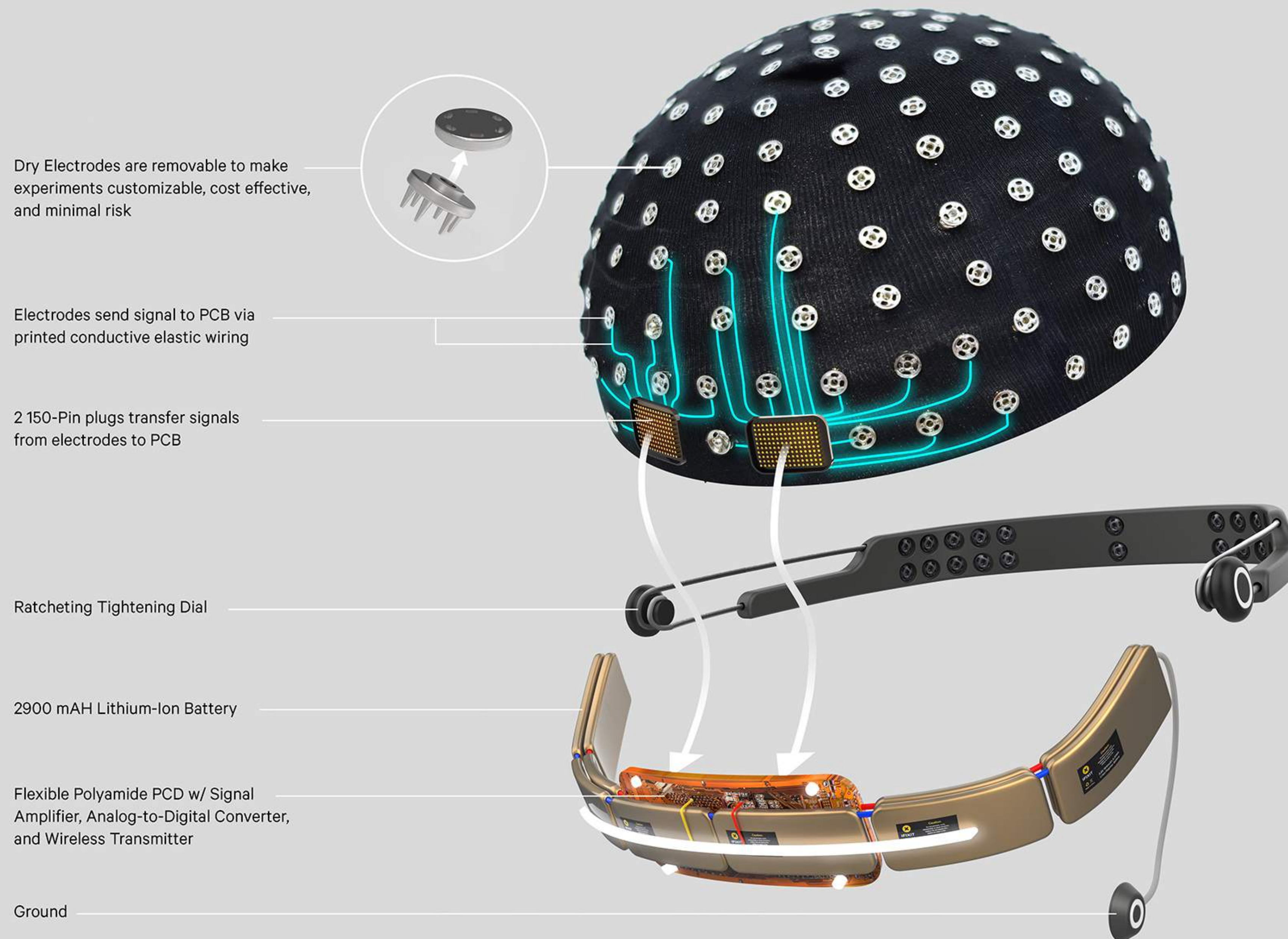


concealing EEG through wig caps.













## Final Model

We prototyped a final physical model for the client presentation



# Our Team





# work in progress

# future of pregnancy

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## Luv | Parent/baby communication system

Luv is a communication system that helps parents stay connected to their unborn baby in a future of artificial wombs

### Skills

Future Casting,  
Solidworks, Rhino

### Time

6 Months  
2019

### Type

Personal Project

### Special Thanks

Thanks to Jeff Higashi, Jesus Galaz, and Candice Baumgardner



# luv your unborn baby

Parents receive this care package from the hospital to help them stay connected to their unborn baby in a future of artificial wombs





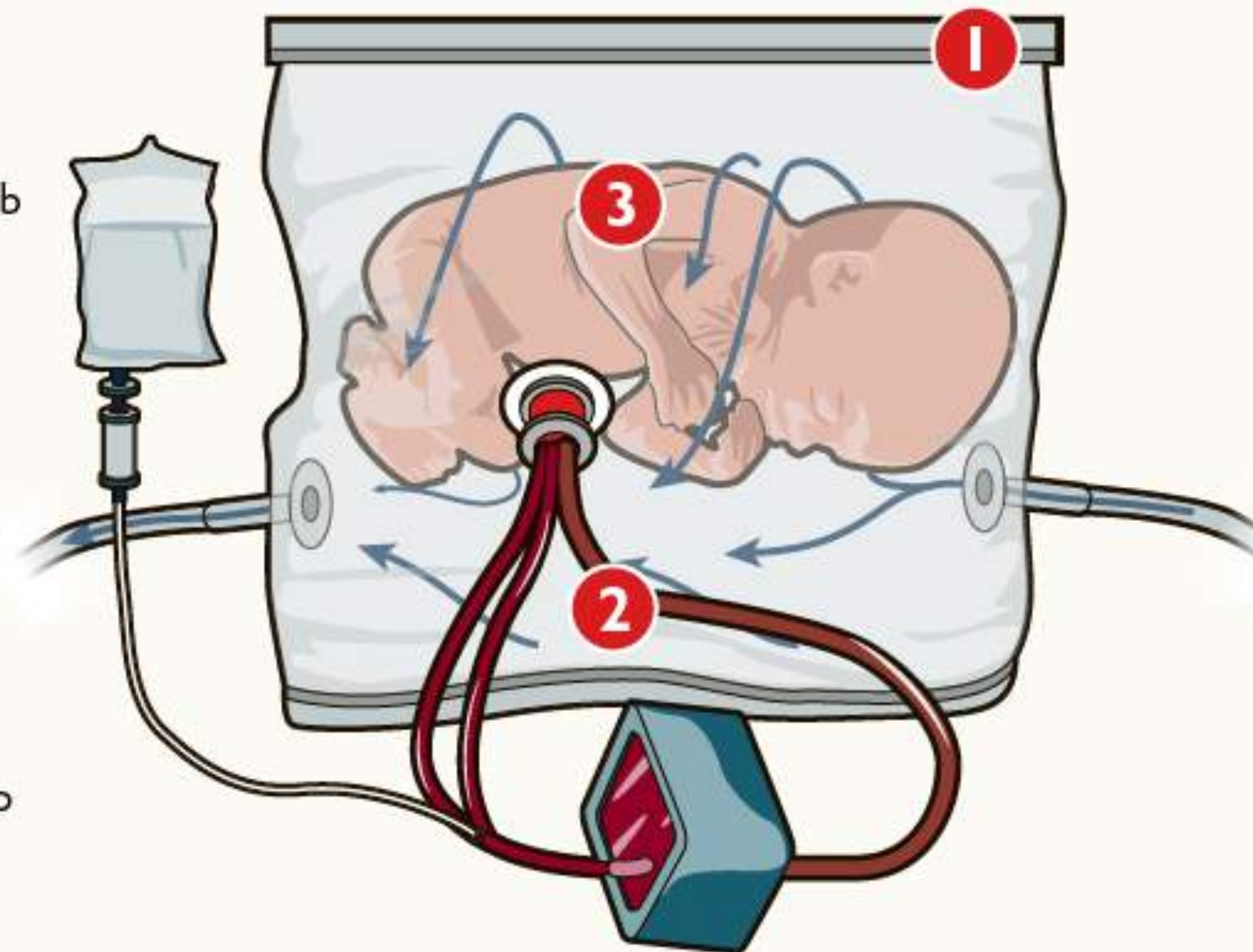
# artificial womb tech can revolutionize neonatal care

It will help extremely premature babies have a greater chance of survival by mimicking the womb.



## How it works

- 1** Foetus transferred into fluid-filled bag mimicking the womb
- 2** Its heart pumps oxygenated blood through an artificial placenta
- 3** Organs can develop with minimal exposure to pathogens

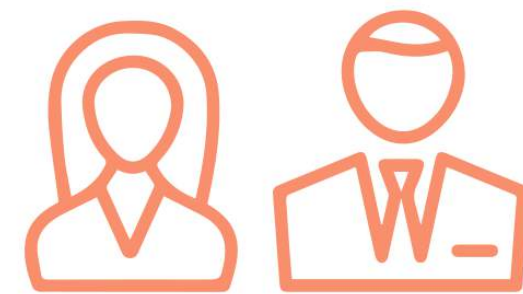




# imagine in 2050 that most babies are born outside of the mother

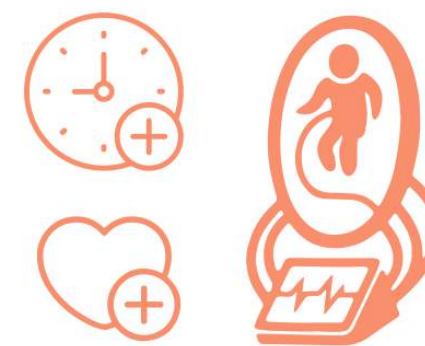
First this technology will be used to help premature babies survive and help mother who cannot conceive to have children of their own.

As the technology normalizes, people may chose artificial wombs as a safer and more optimal way to have children.



## Focused on career

Pregnancy is a time and health intensive, but emotionally rewarding experience for mothers. In pursuit of career women may opt out of pregnancy



## Time and Safety Benefits from Artificial Pregnancy

These are factors future women will consider when choosing natural vs artificial birth



## The Great Equalizer, but loss of femininity?

This technology brings up the questions towards the nature of womanhood when the natural distinction of femininity is taken away

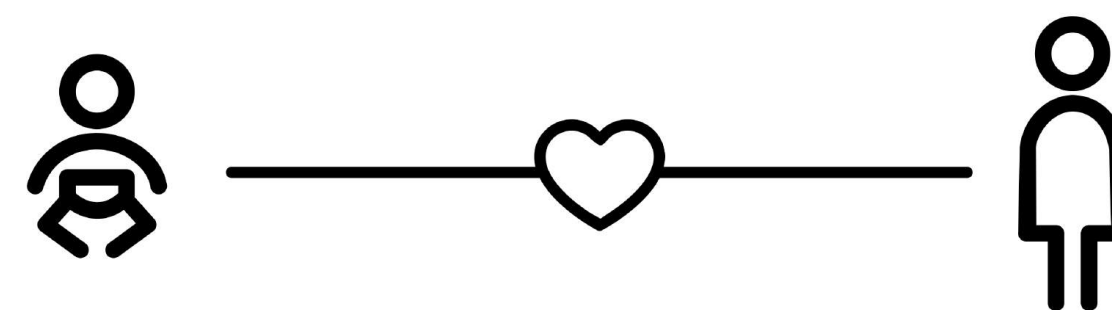


meet luv



**future problem:**

When the mother is separated from the child there is a need to recreate the parent-child emotional & physical bond



**future solution:**

LUV is a communication system for parents to stay connected to their child

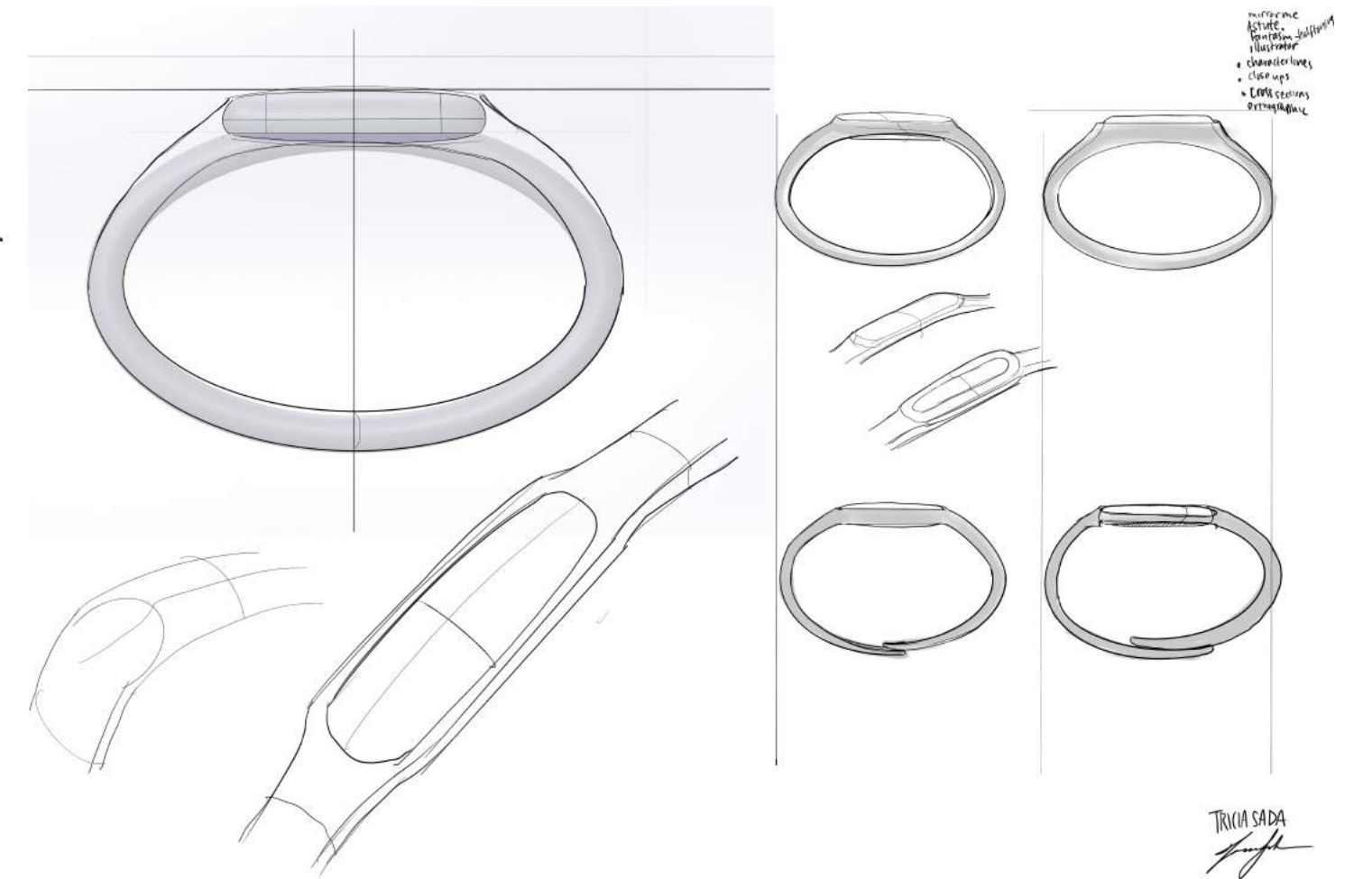
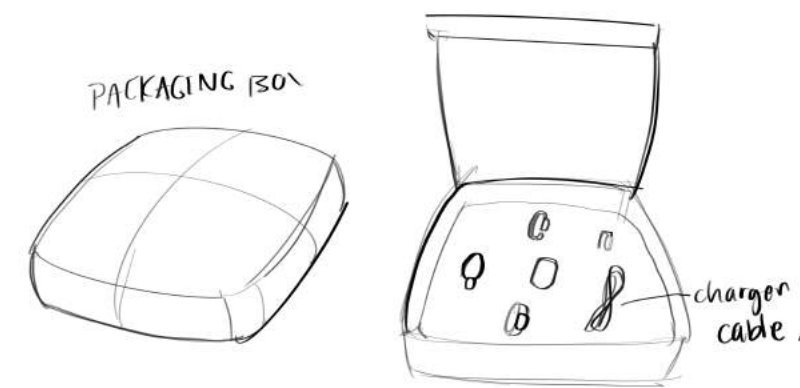
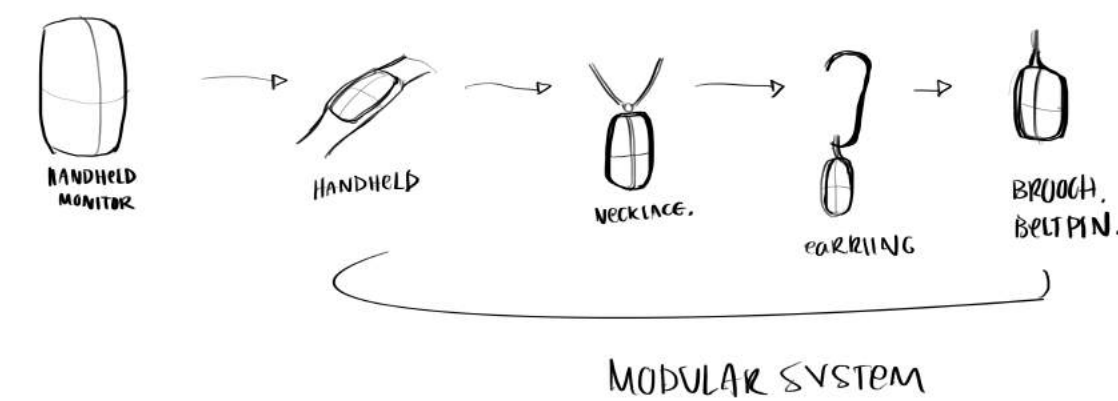
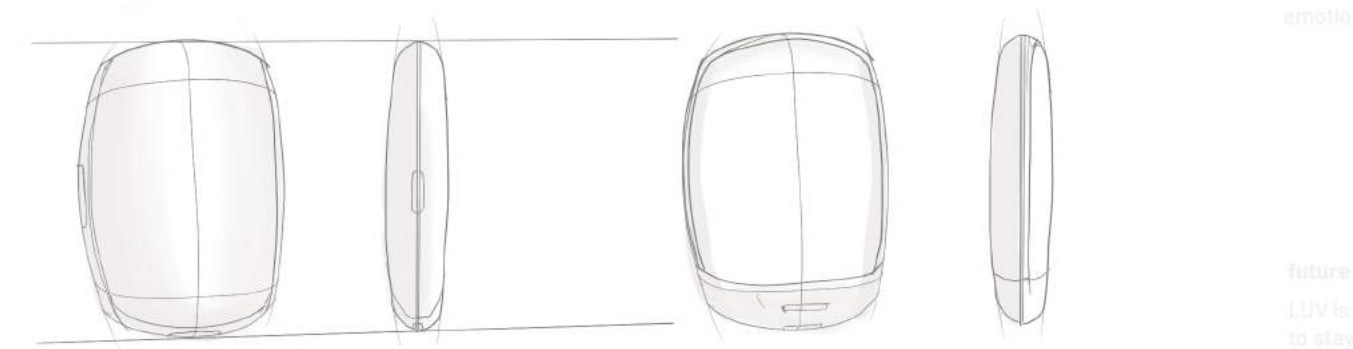
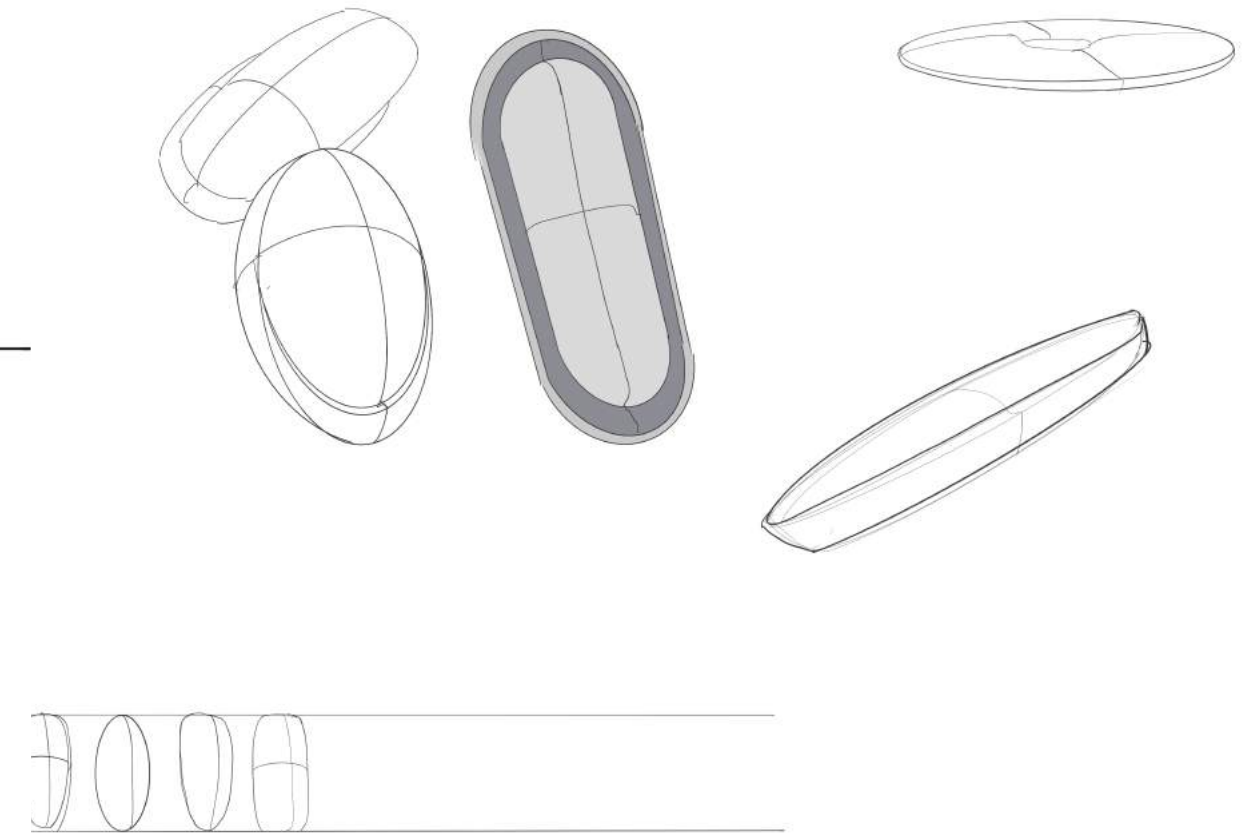
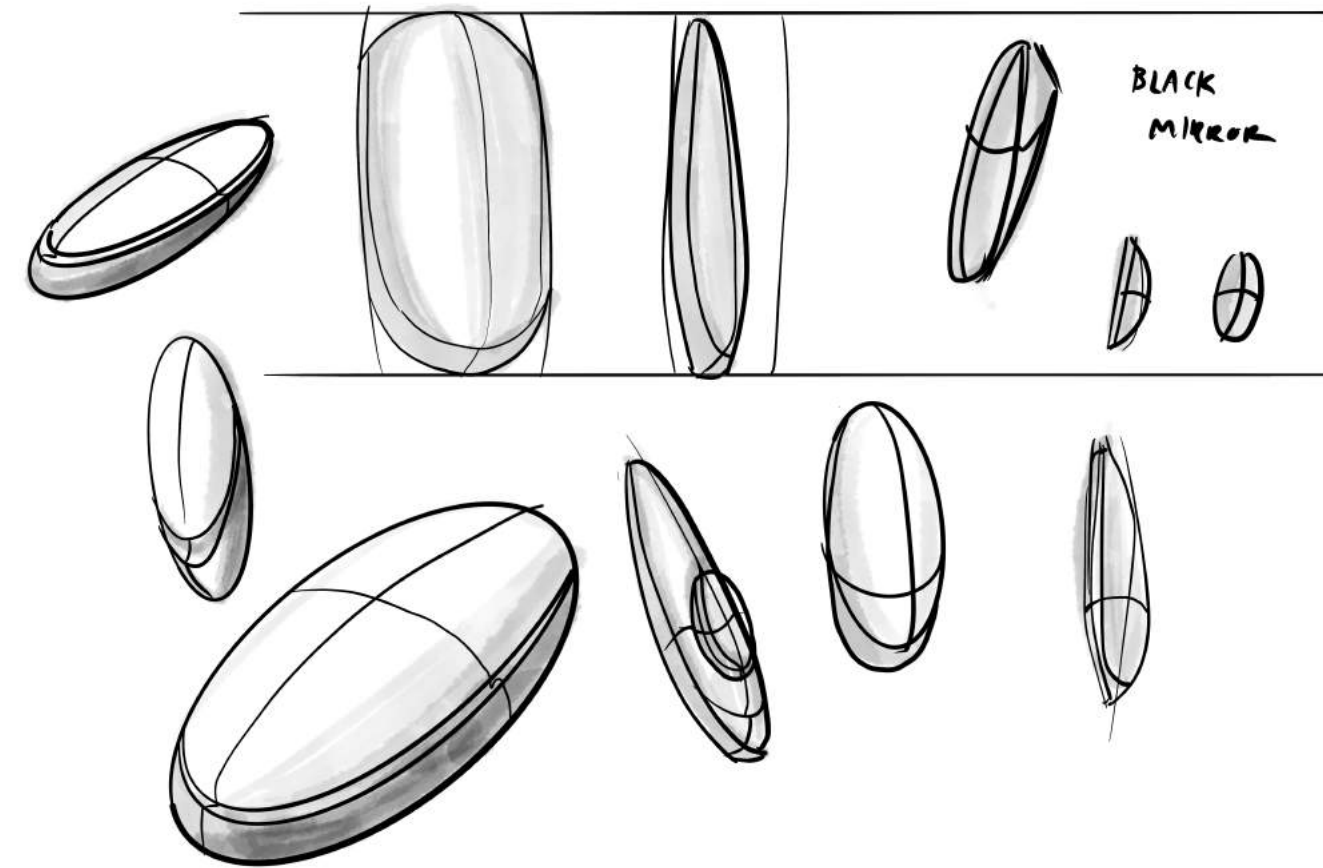
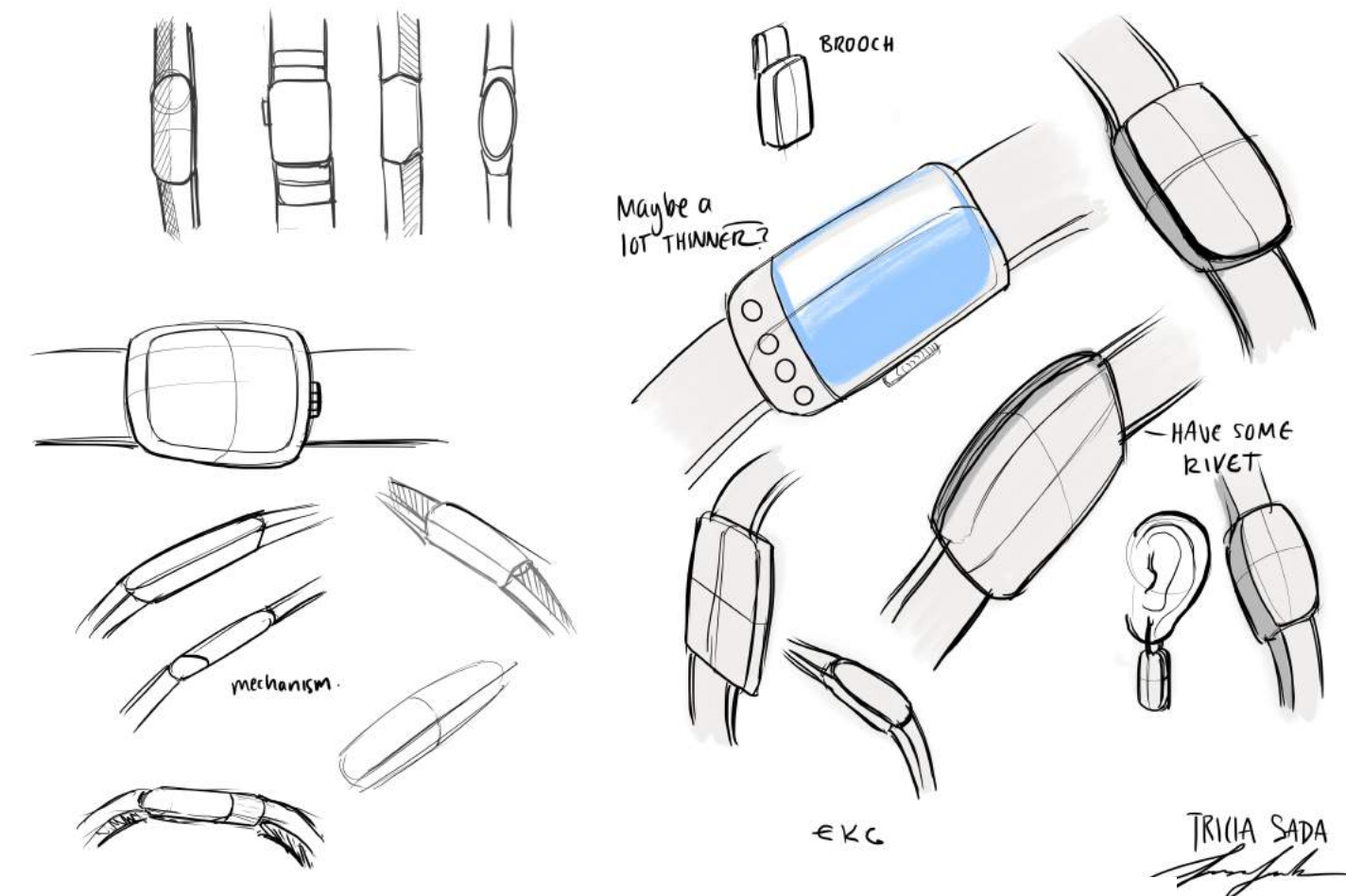


# moodboard



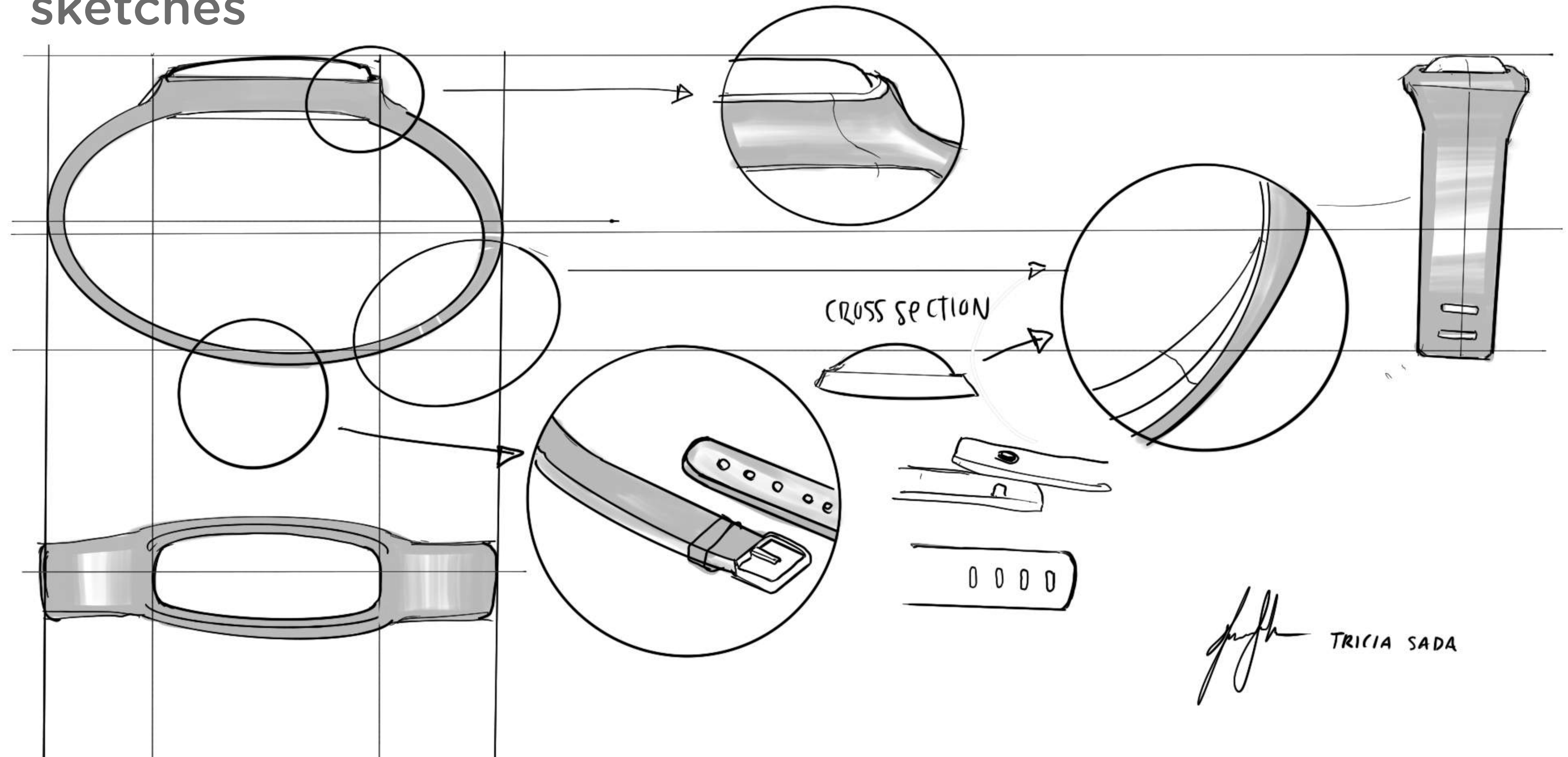


# sketches





# sketches



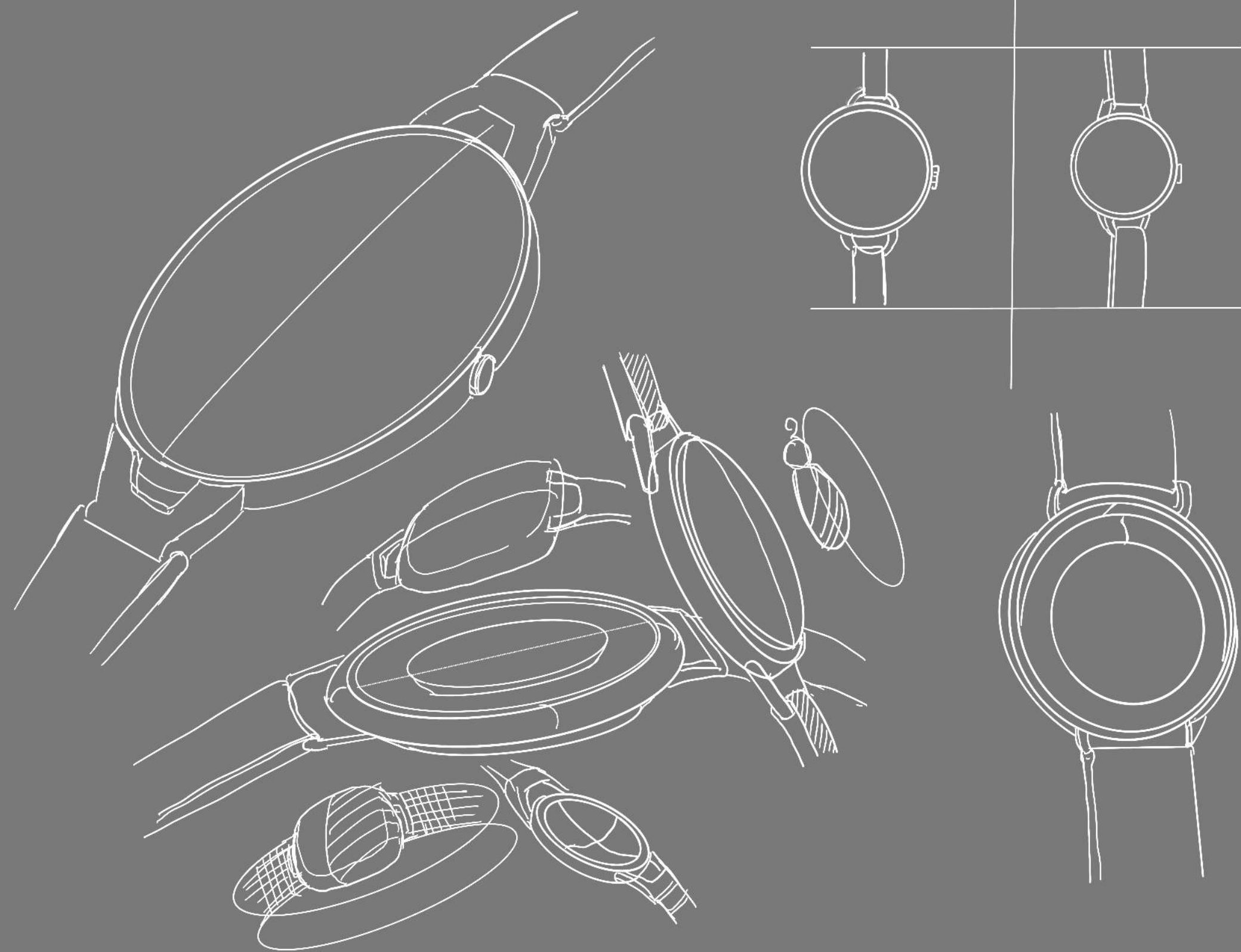


mockups





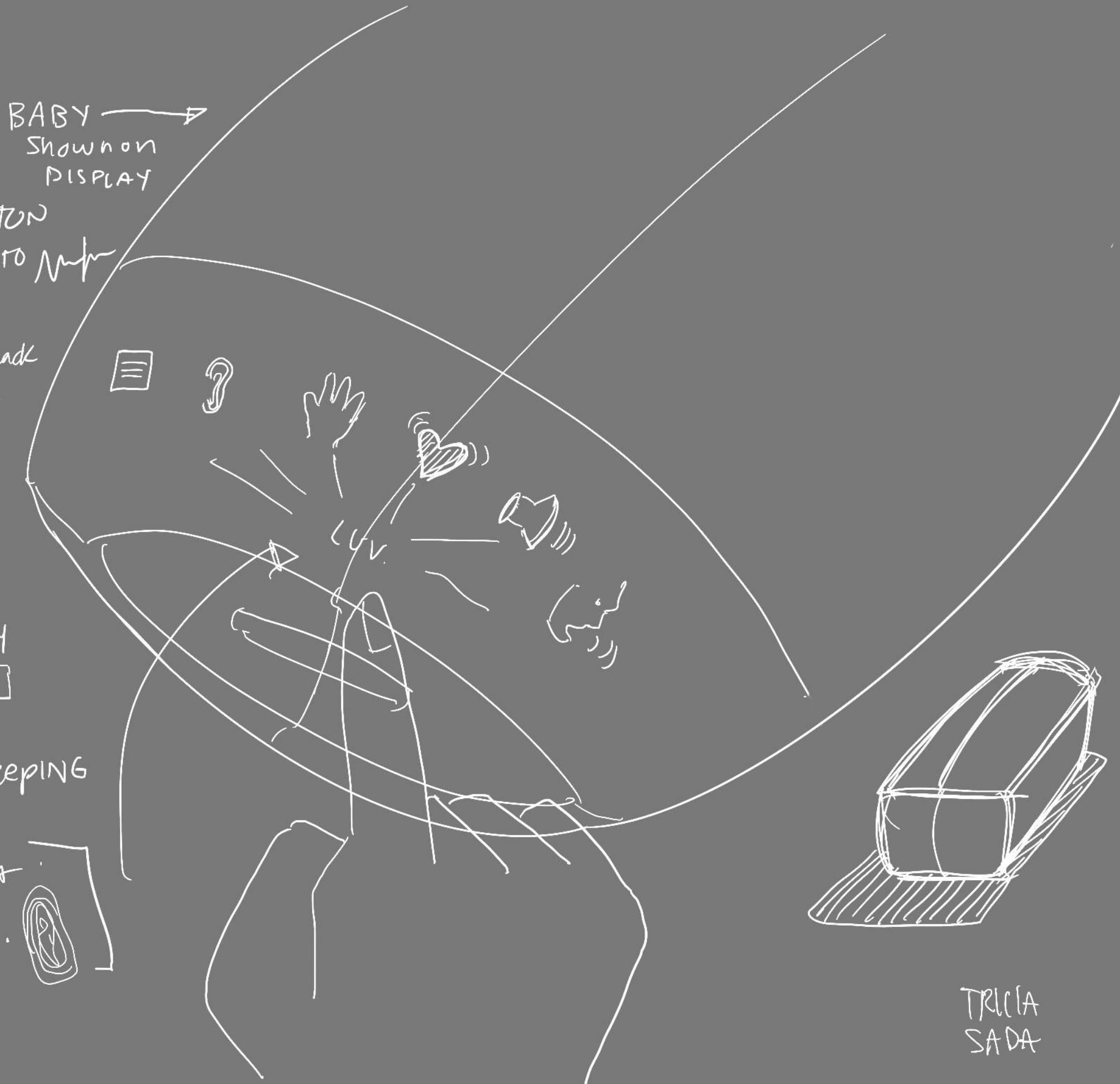
# sketches



TRICIA  
SADA

- ① RUB BELLY BABY →  
shown on  
display
- ② PRESS BUTTON  
TO TALK TO  
BABY [wavy line]
- ③ haptic feedback  
movement.
- ④ double tap.  
to hear  
sound.
- ⑤ AGE OF BABY  
10 weeks.
- ⑥ BABY IS SLEEPING

[Fingerprint  
enabled. [fingerprint icon]



TRICIA  
SADA





luv

listen to baby  
send heartbeat  
touch baby











# luv your unborn baby

Stay connected to your child and  
alleviate your anxiety.





# epson

## Packaging Rebrand

This is a packaging project that rebrands Epson for creatives.

### Skills

Packaging Design,  
Branding

### Time

14 Weeks  
2018

### Type

Packaging

### Special Thanks

Ania Borysiewicz



EPSON®

## Rebrand Epson

How might we better reflect the premium value of Epson products through branding?



# Packaging doesn't reflect quality

Epson is known for its printers and inks, but it has seemingly low-cost packaging that doesn't reflect its premium quality prints.

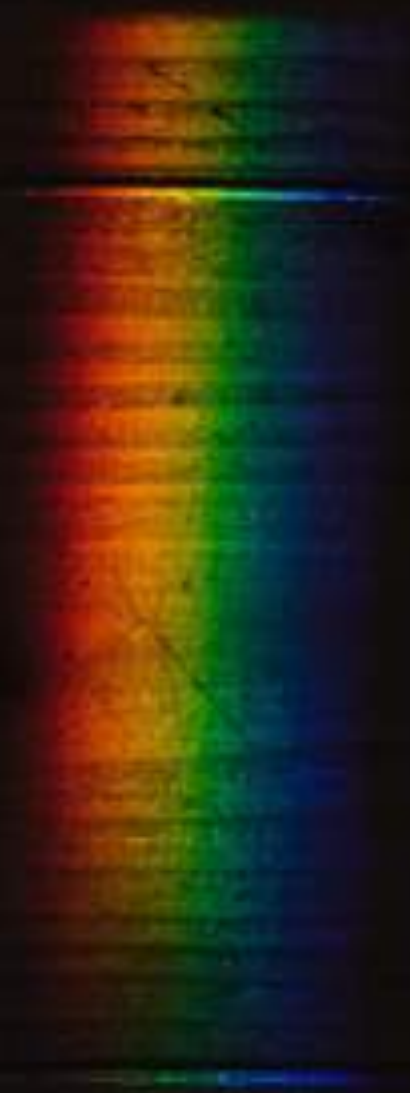
**EPSON**  
EXCEED YOUR VISION





# Epson is a Color Company

It's not just a printer and ink company. Through embracing color precision, Epson can tap into the perfectionist idiosyncrasies of the obsessive creative





# It's for the Obsessive Creative

Epson is for the people who can't help but obsessively kern their type. It's for those that agonize over each Bezier curve or surface change, just looking to reach aesthetic perfection.





# 3 Concepts

I created 3 different product strategy concepts to spark obsession with creatives



## Metallic Ink

to illuminate creatives prints

## Paper Packaging

to showcase creative work

## Cleaning kit

for a perfectionist creative



# Care for your printers

With the introduction of a cleaning syringe and solution, creatives can feel compelled to care for their printers the way car enthusiasts lovingly maintain their cars, rather than banging up their printer out of frustration.





# Paper Packaging as Canvas

With the introduction of a cleaning syringe and solution, creatives can feel compelled to care for their printers the way car enthusiasts lovingly maintain their cars, rather than banging up their printer out of frustration.





# Introducing Metallic Inks

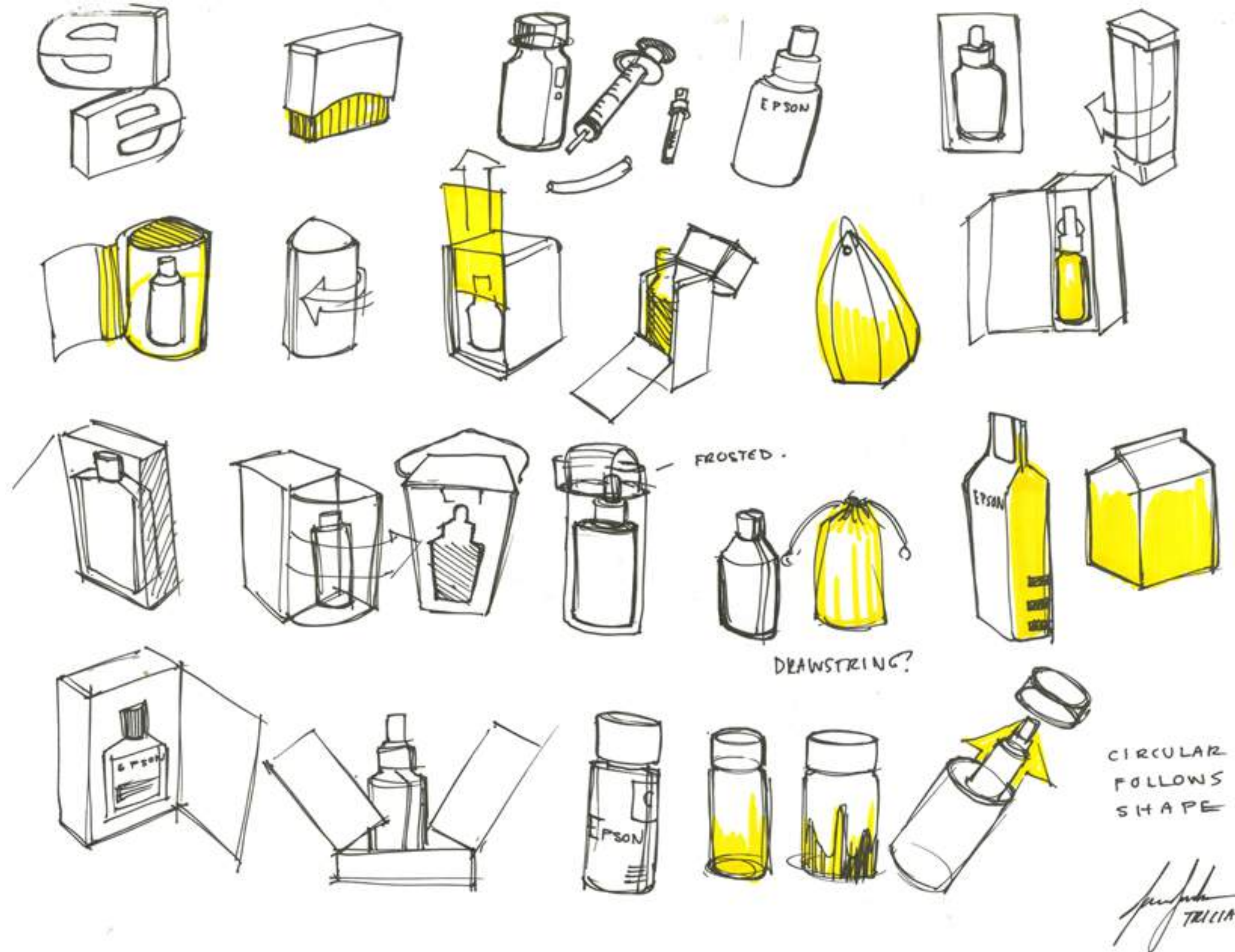
Metallic inks for inkjet printers can be introduced to generate excitement with creatives, and is possible as they are already produced with Epson Surecolor printers.





# Ideating Forms

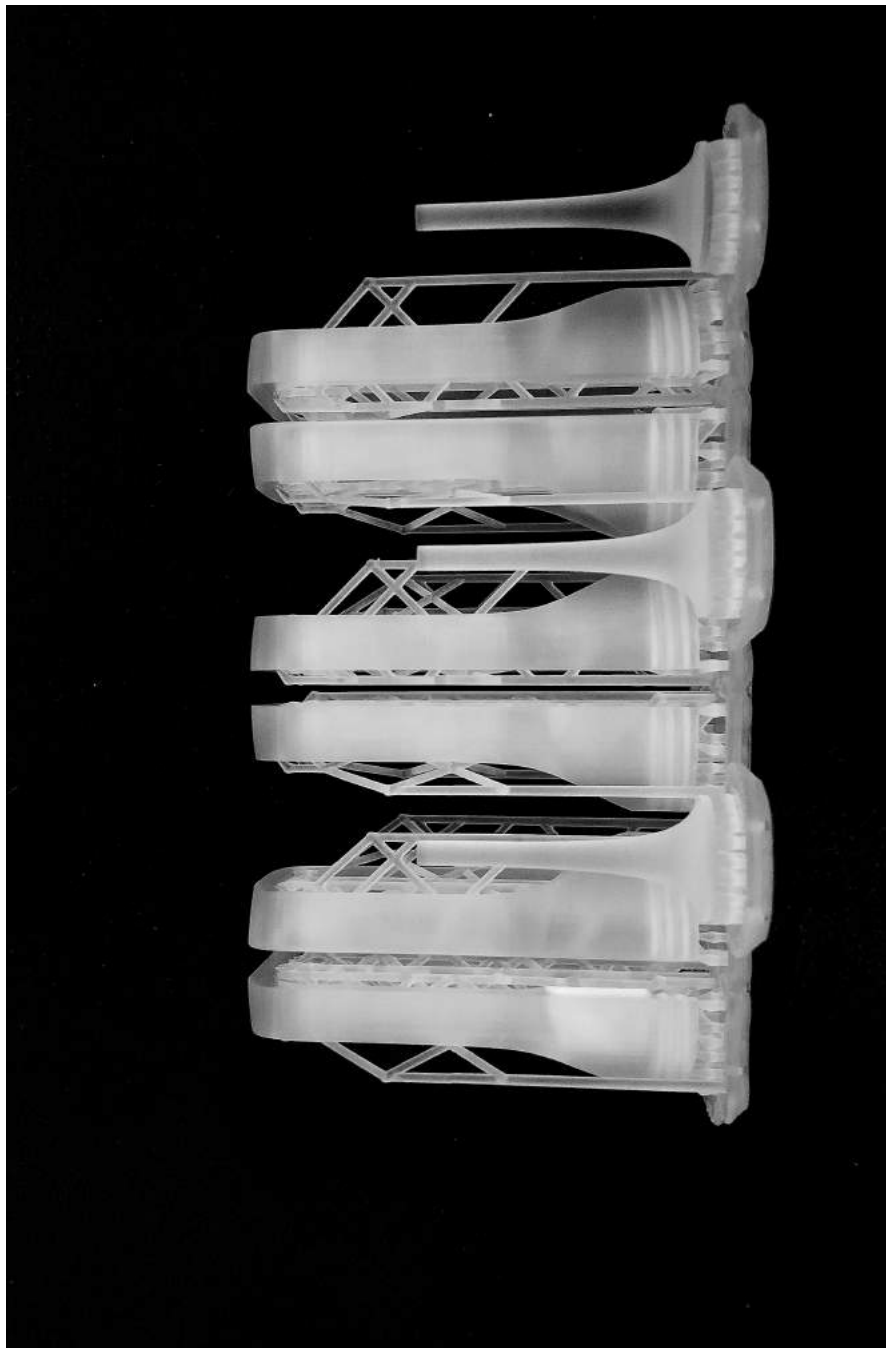
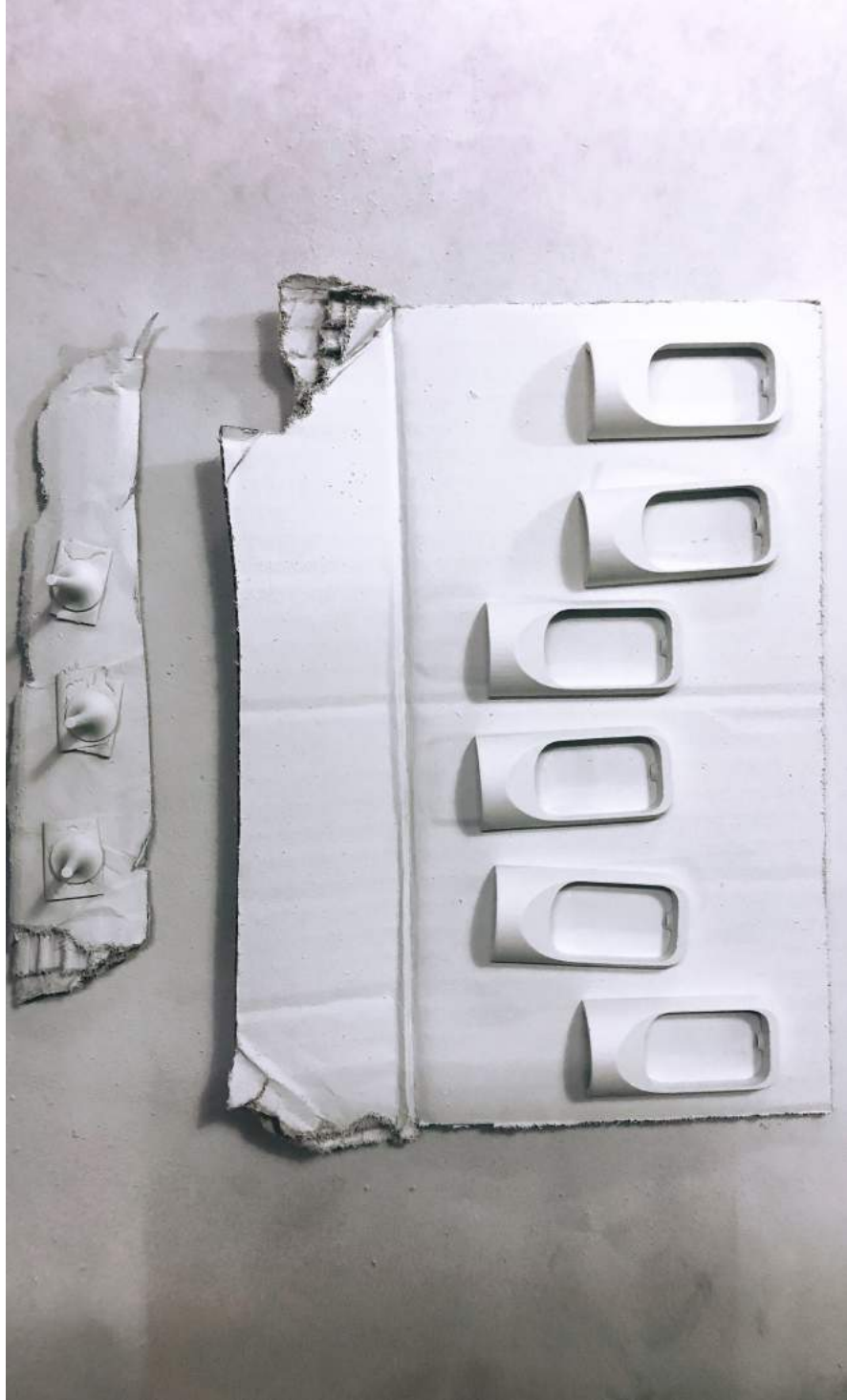
Creating exciting moments for  
creatives opening ink packaging





# Making Process

Bringing it to life





# skeletal skates

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## Roller Derby Skate

This project redesigns the derby skate for Gotham Girls Roller Derby, based off of ethnographic research and insights from athletes.

Imagine if we can empower a new generation of women through modernizing the derby skate to reflect its professional athletic status.

### Skills

Ethnographic User  
Research, Mechanisms,  
Branding

### Time

14 Weeks  
2018

### Type

Soft Goods

### Special Thanks

Thanks to Kevin Beard and  
Kimberly Marte





*Derby Reimagined with*  
**SKELETAL  
SKATES**



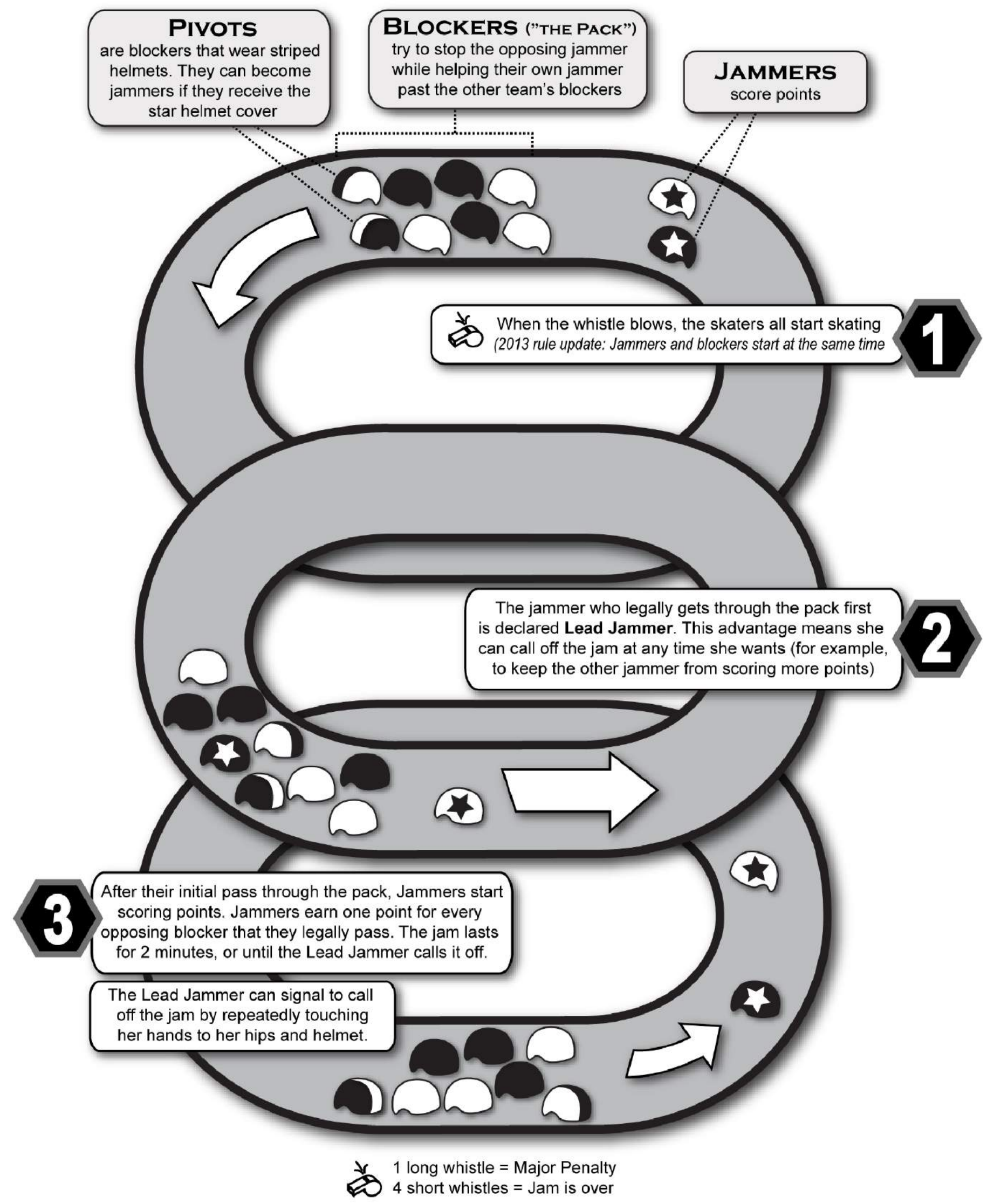


Roller Derby is an empowering  
women-dominated full-contact sport.





# ROLLER DERBY?







But the skates haven't had a major update for decades



Until now with  
**SKELETAL  
SKATES**



I visited a lot of local derby places  
and even tried out for their team



## NATSUMI FUJIMOTO

Derby Dolls Fresh Meat  
Decided to play because  
her derby wife Susan  
convinced her



## BATTY

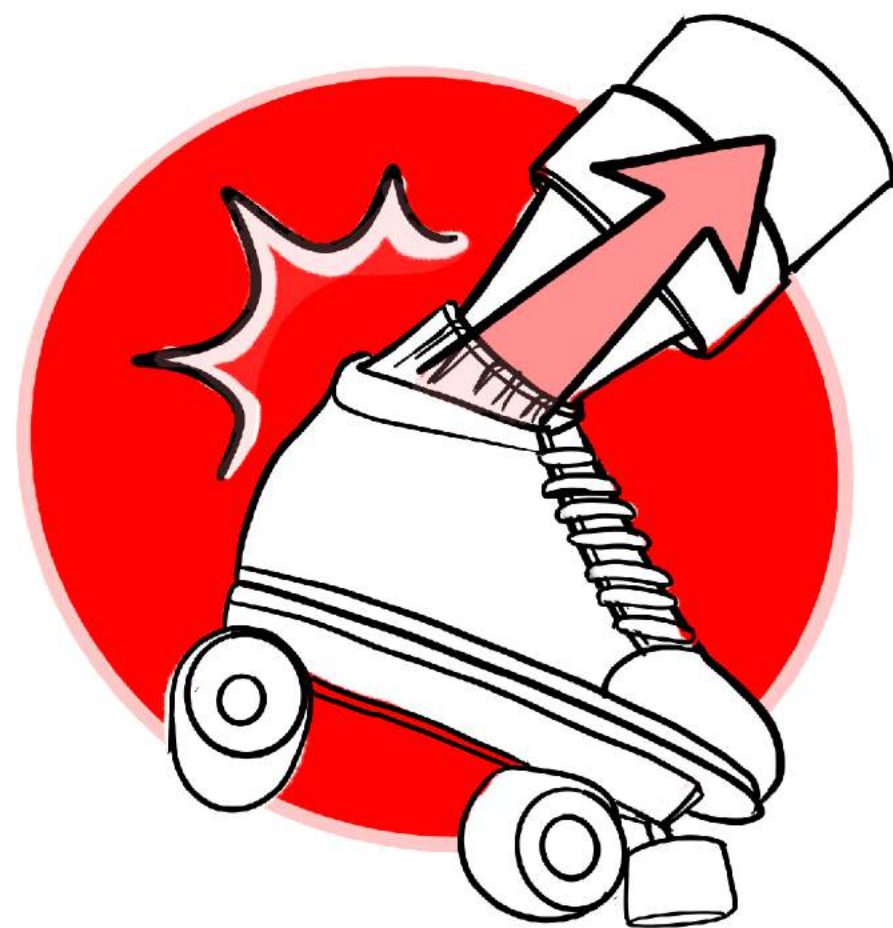
Angel City Derby  
Batty is my derby coach for the  
new recruits. She coaches and  
organizes communications.



## NEGATRON

Angel City  
Experienced Skater  
She showed me her  
skates and helped me  
really understand the  
complexities of them.





Heel Slip



Neomi

Derby Dolls  
Experienced Skater

## Slow motion reveals heel slip

Skates need to fit like a second skin or else force gets wasted in exertion, reducing performance.



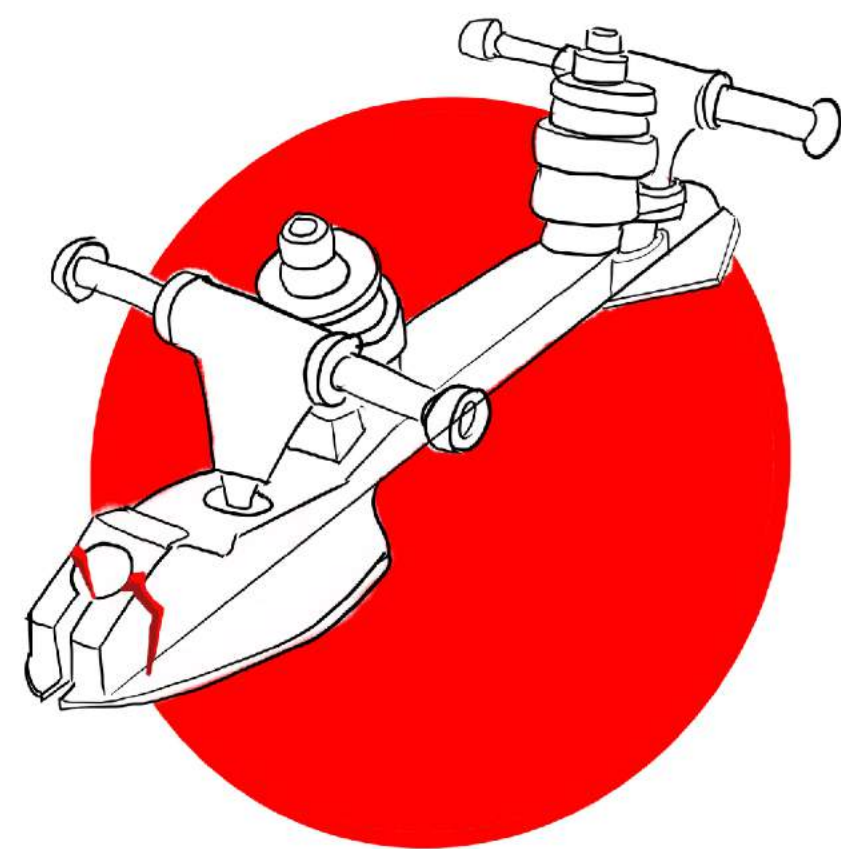
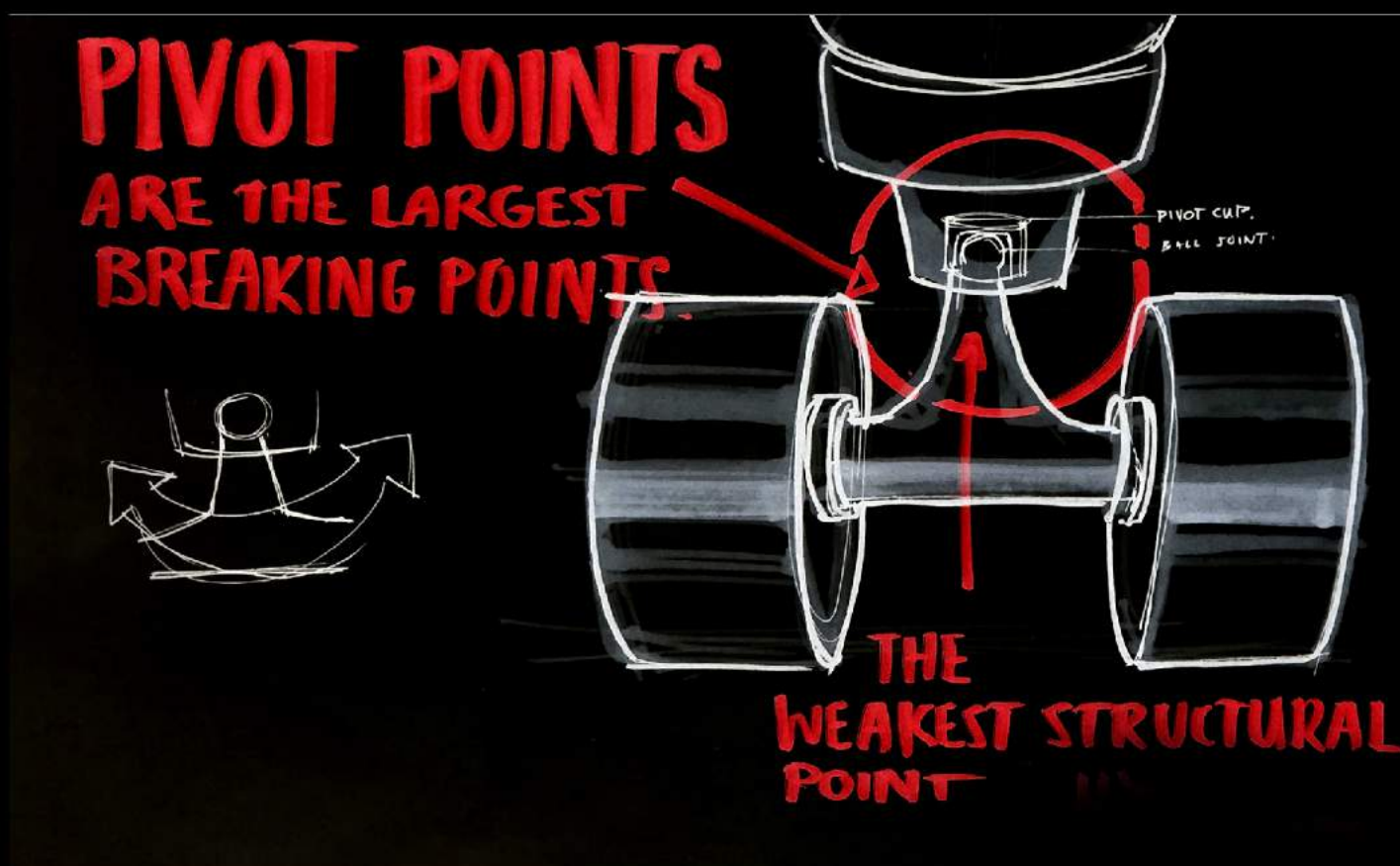


Plate Breakage

## Plate breakage is mentioned 3 times

Players are constantly on their toes, moving from side to side, leading to breakage here.



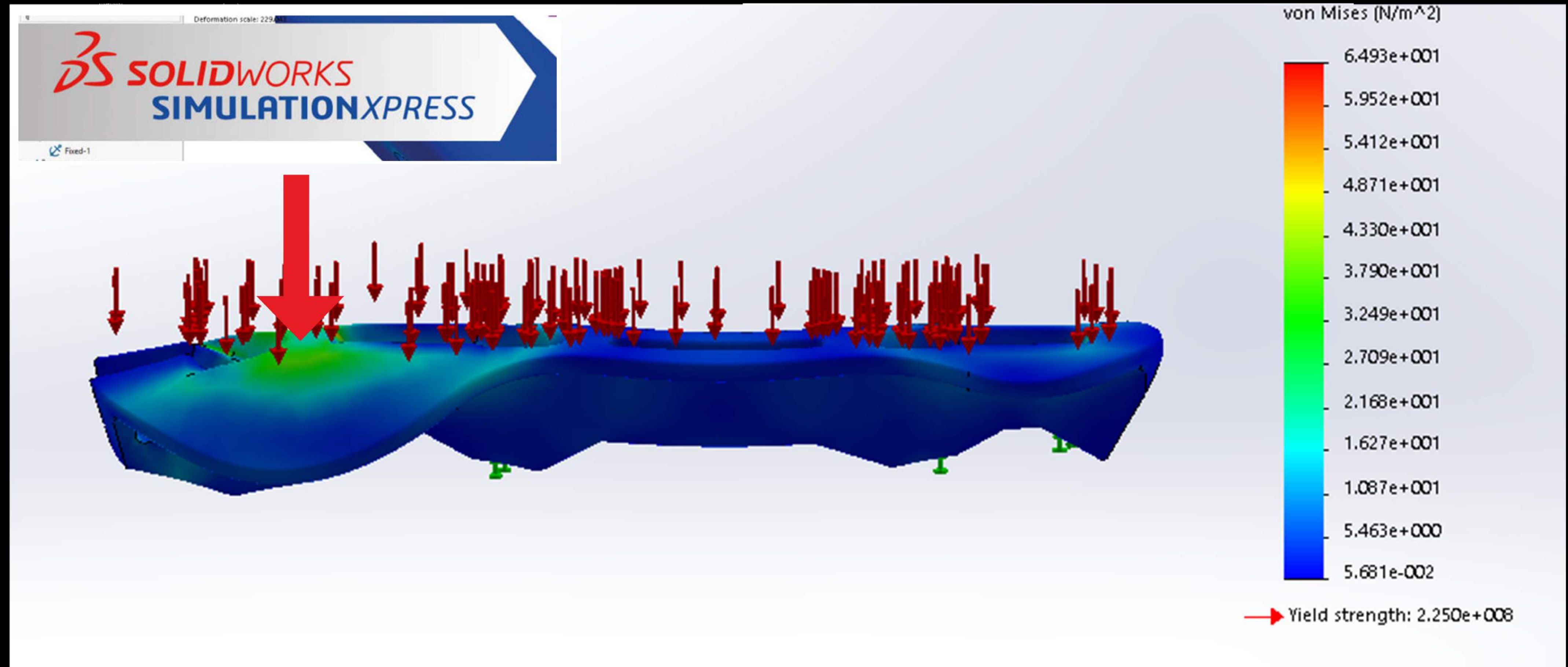
Player mentioned **breakage**

Skate Shop owner mentioned **breakage**





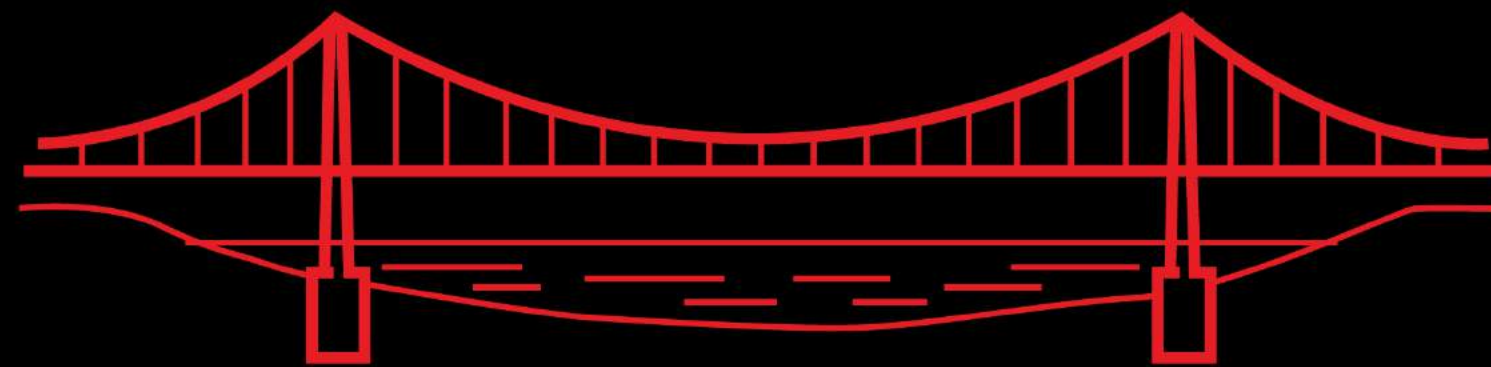
Solidworks force simulation reveals same **breakage** point.



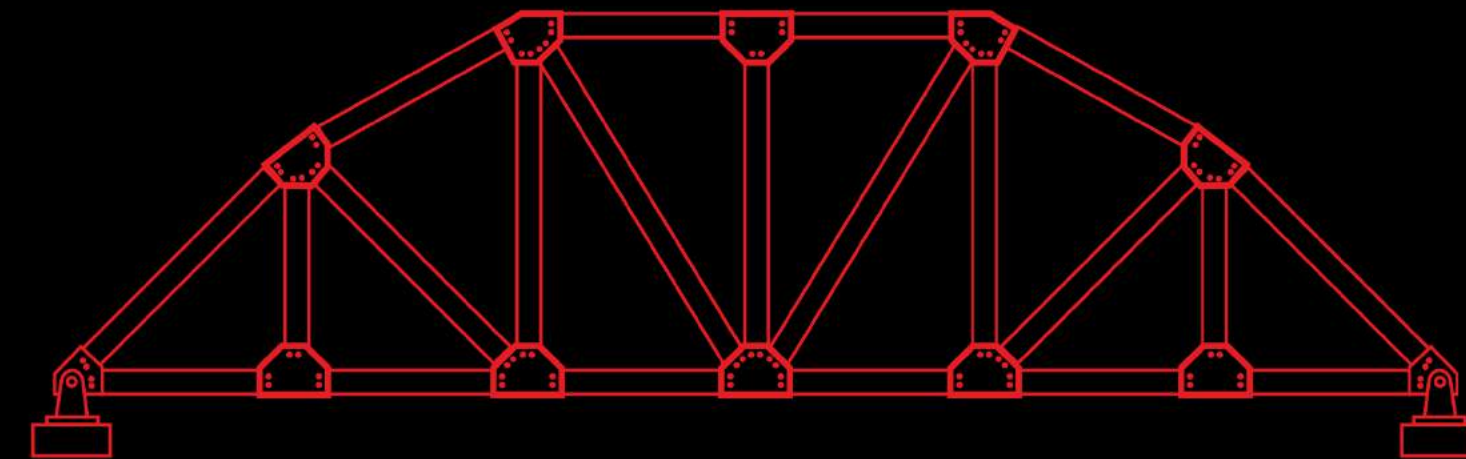


# How can we strengthen the skate plate?

*Lets get inspired by bridges.*

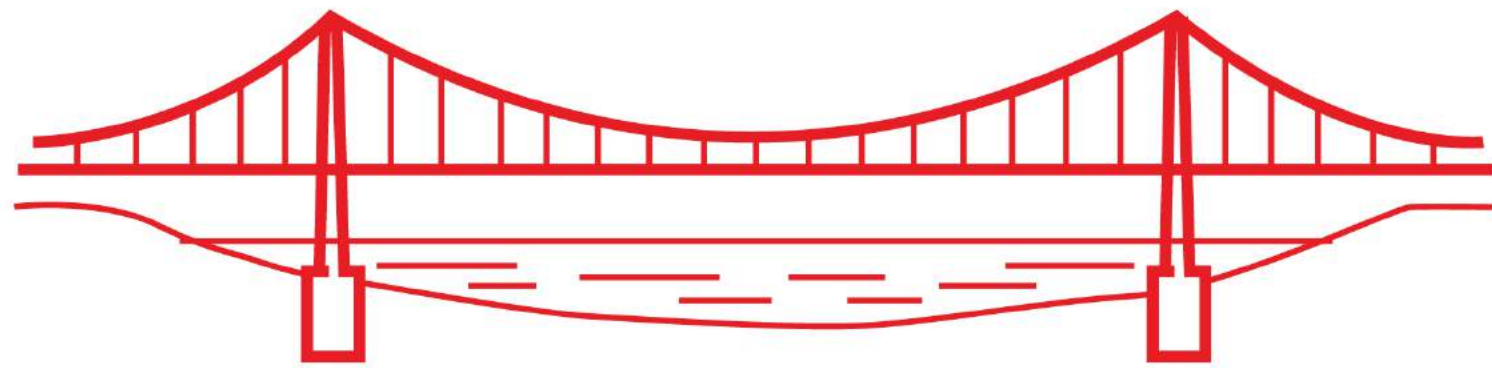


**Suspension Bridge**

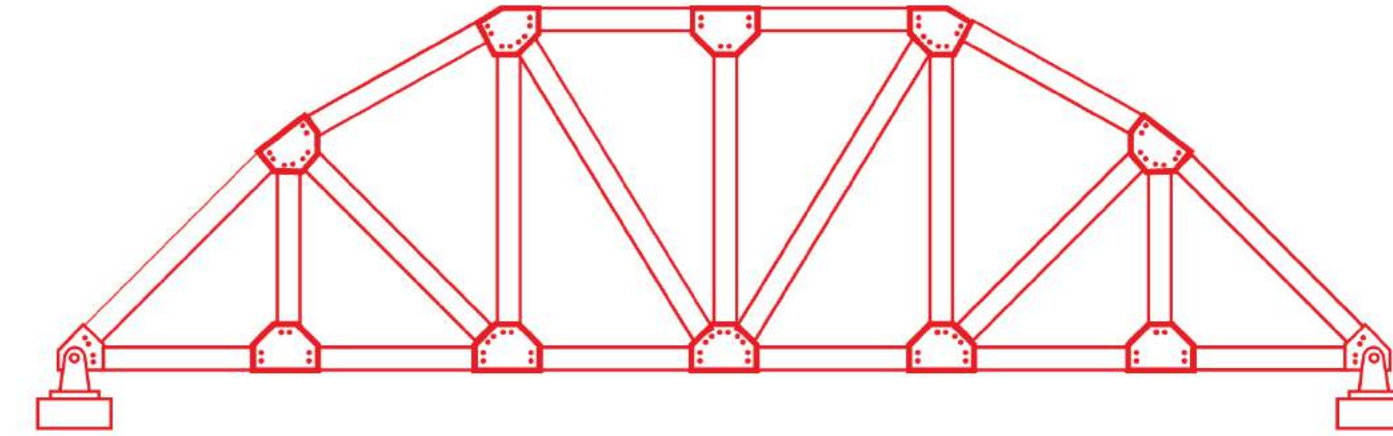


**Truss Bridge**





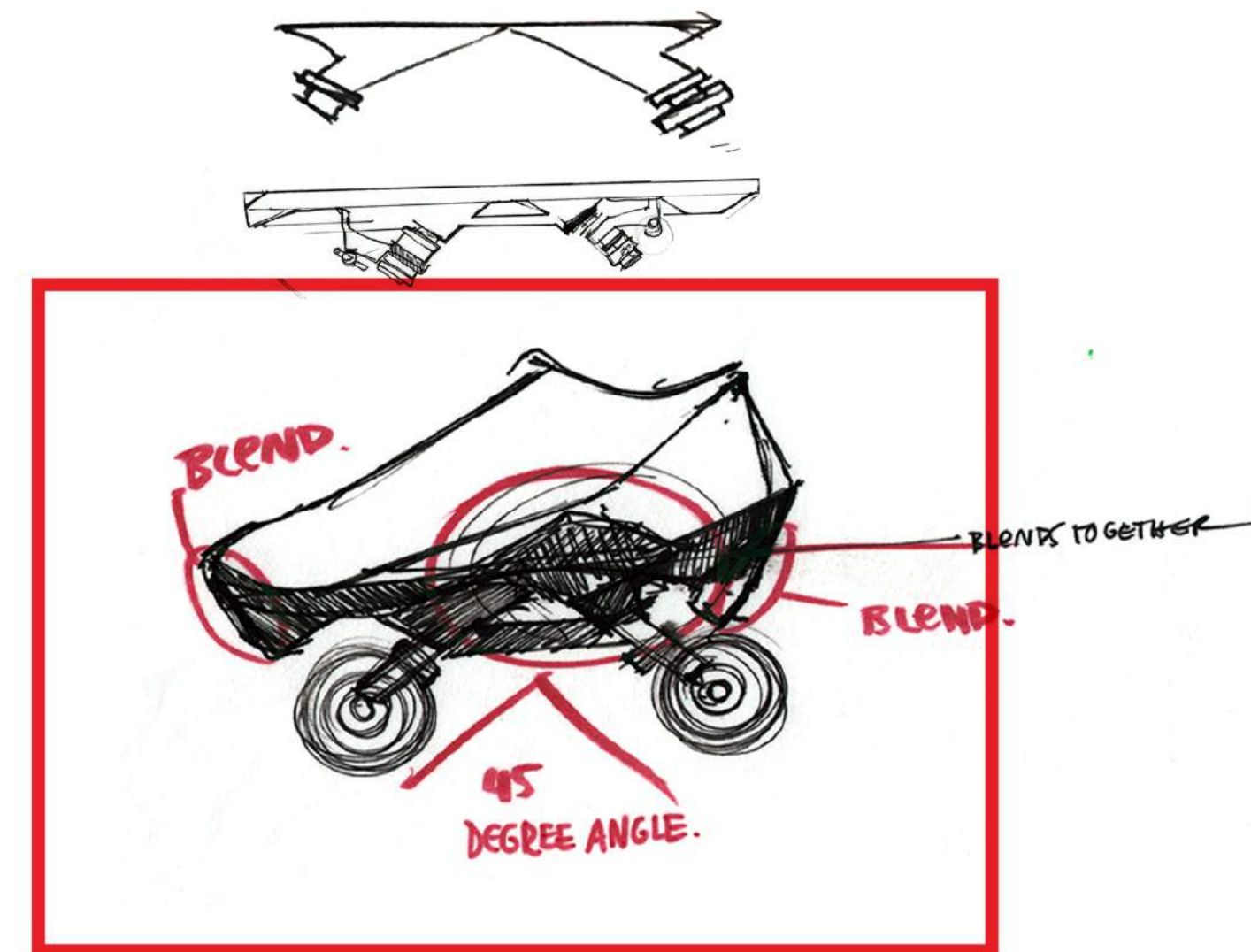
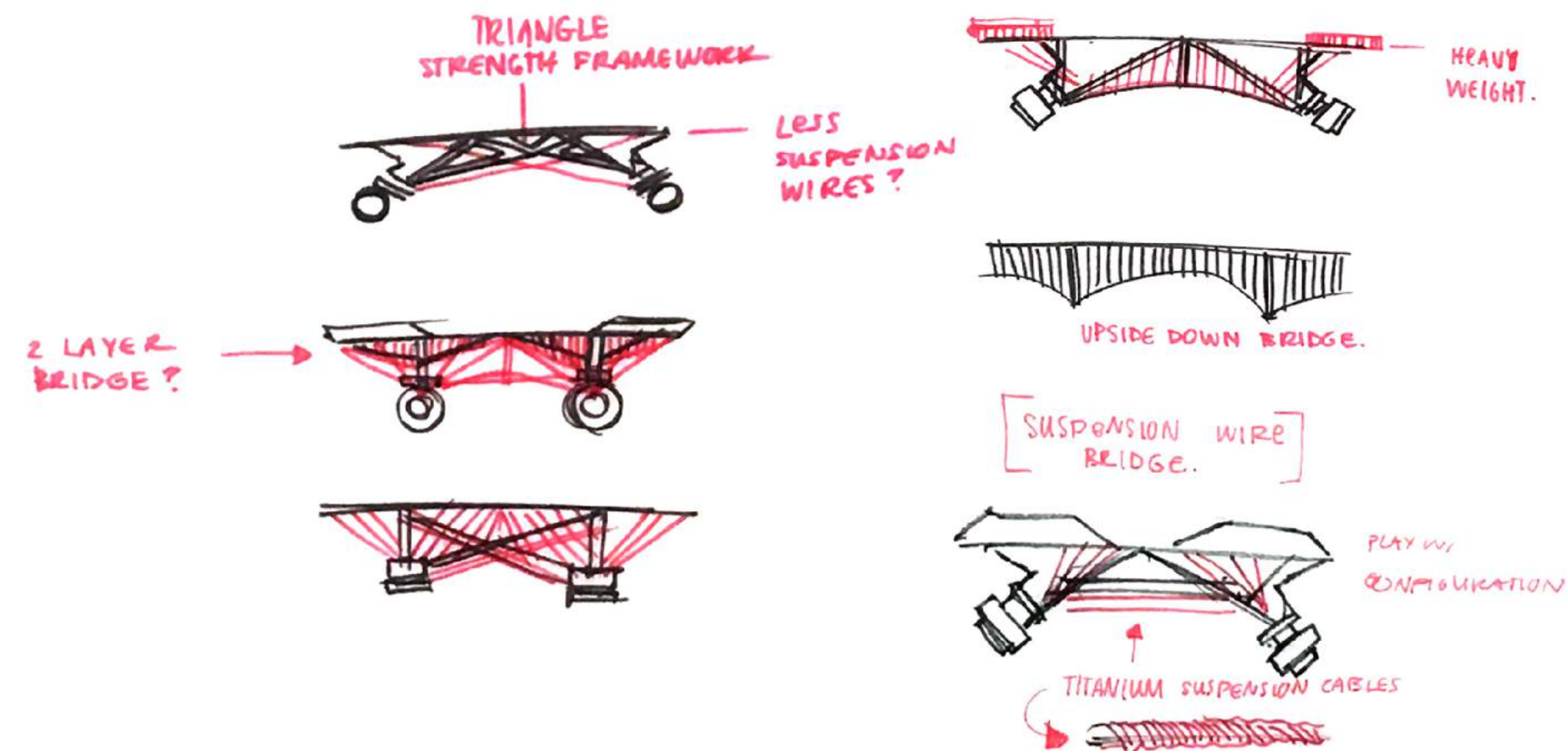
Suspension Bridge



Truss Bridge

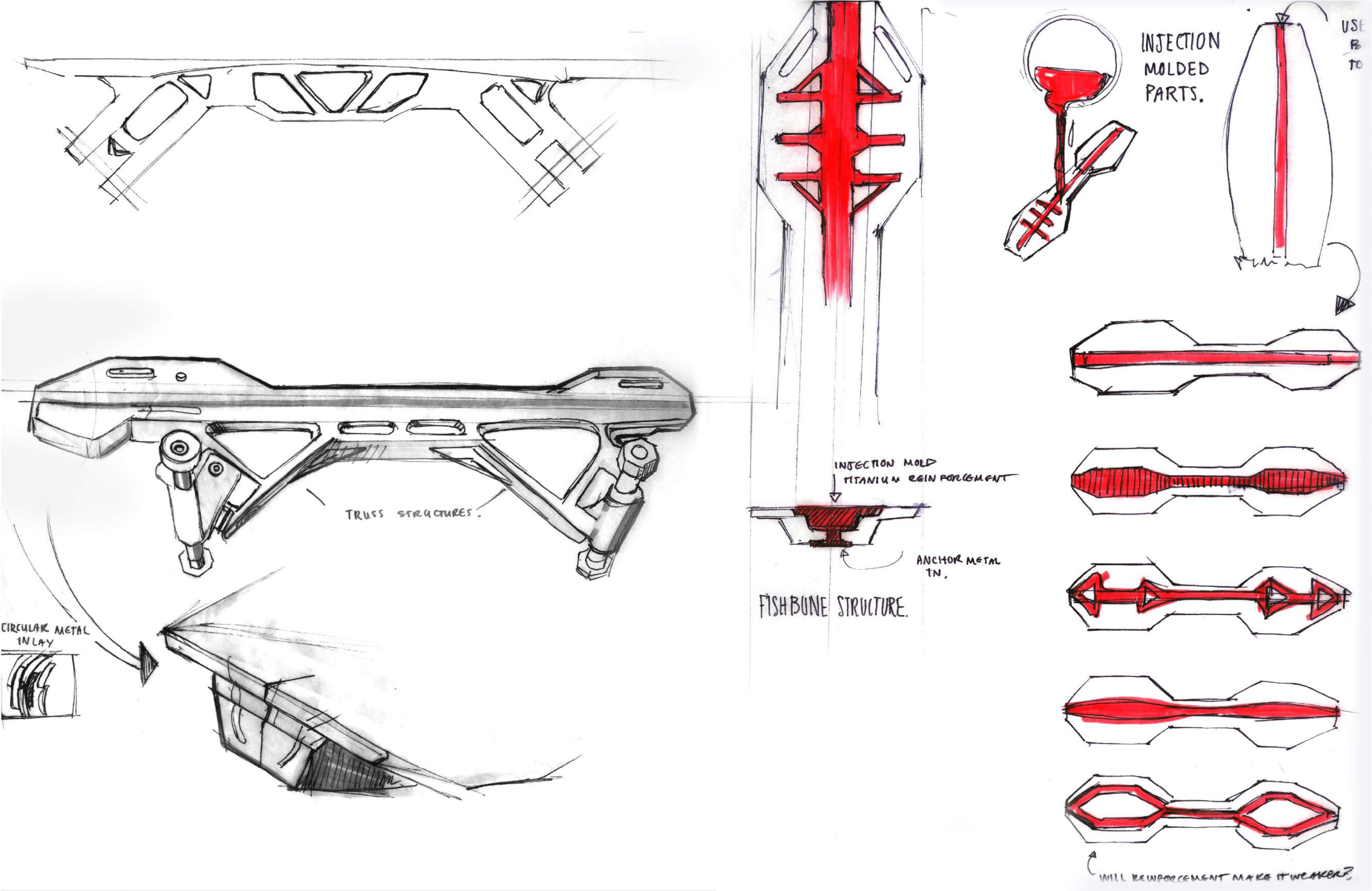
Problem: Wires might scratch and injure other players

Truss structures seem to provide the best support



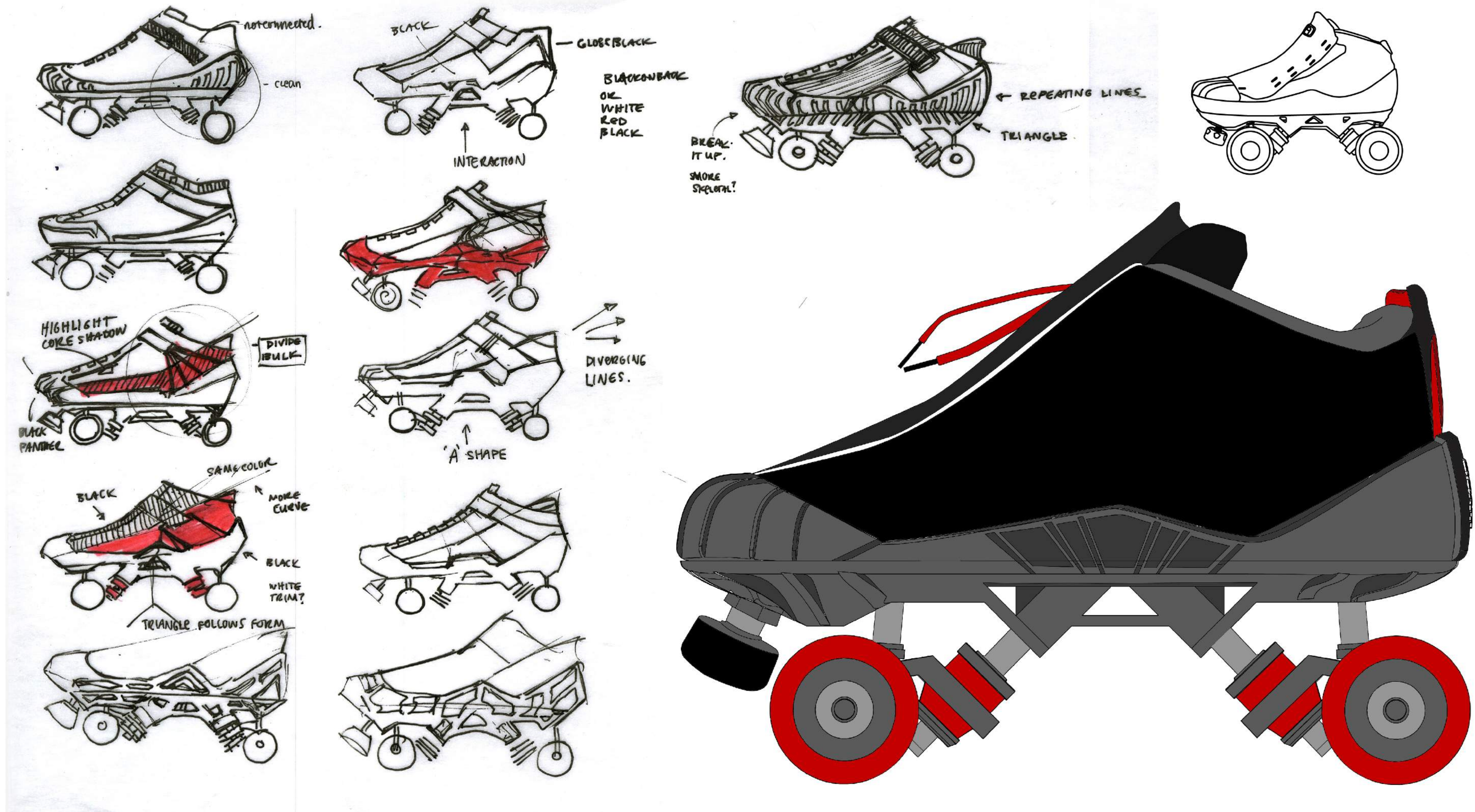


How can we add trusses to fortify the skate?

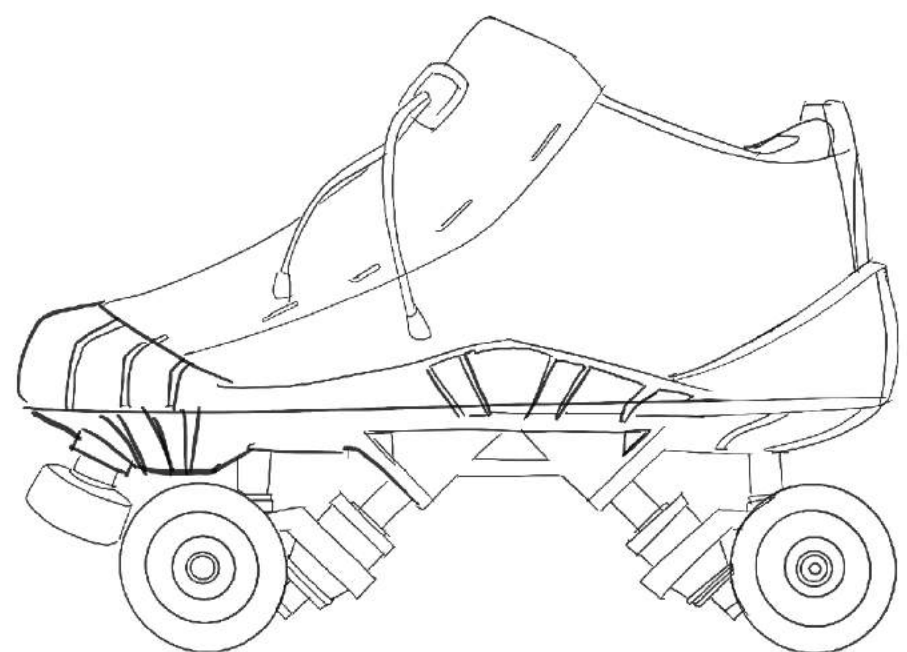




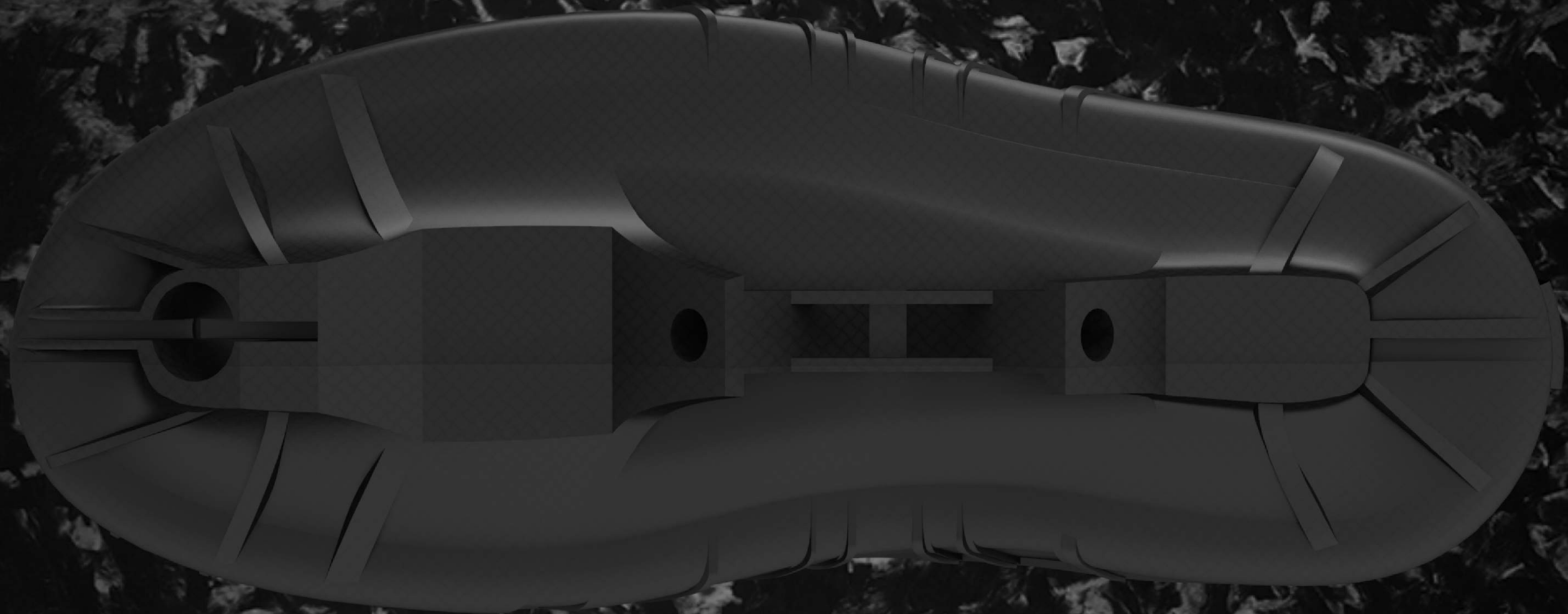
## Capturing the DIY Punk feel through styling







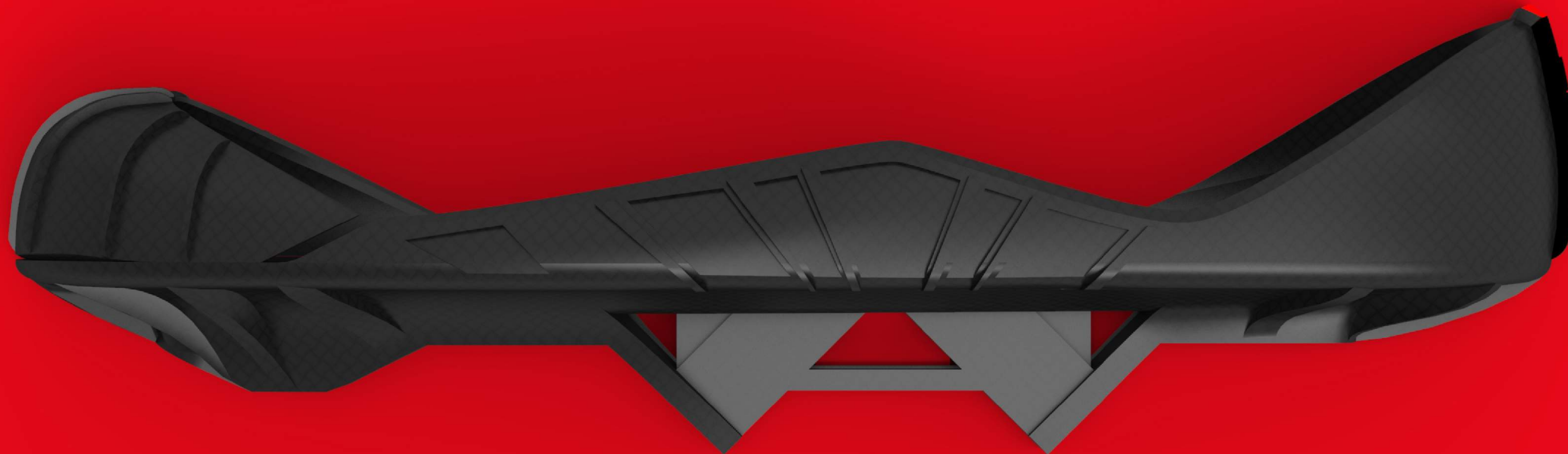




# Fortified with Truss Structures.

To strengthen and prevent plate breakage, Skeletals have been installed with truss structures and molded from carbon fiber re-inforced plastics.





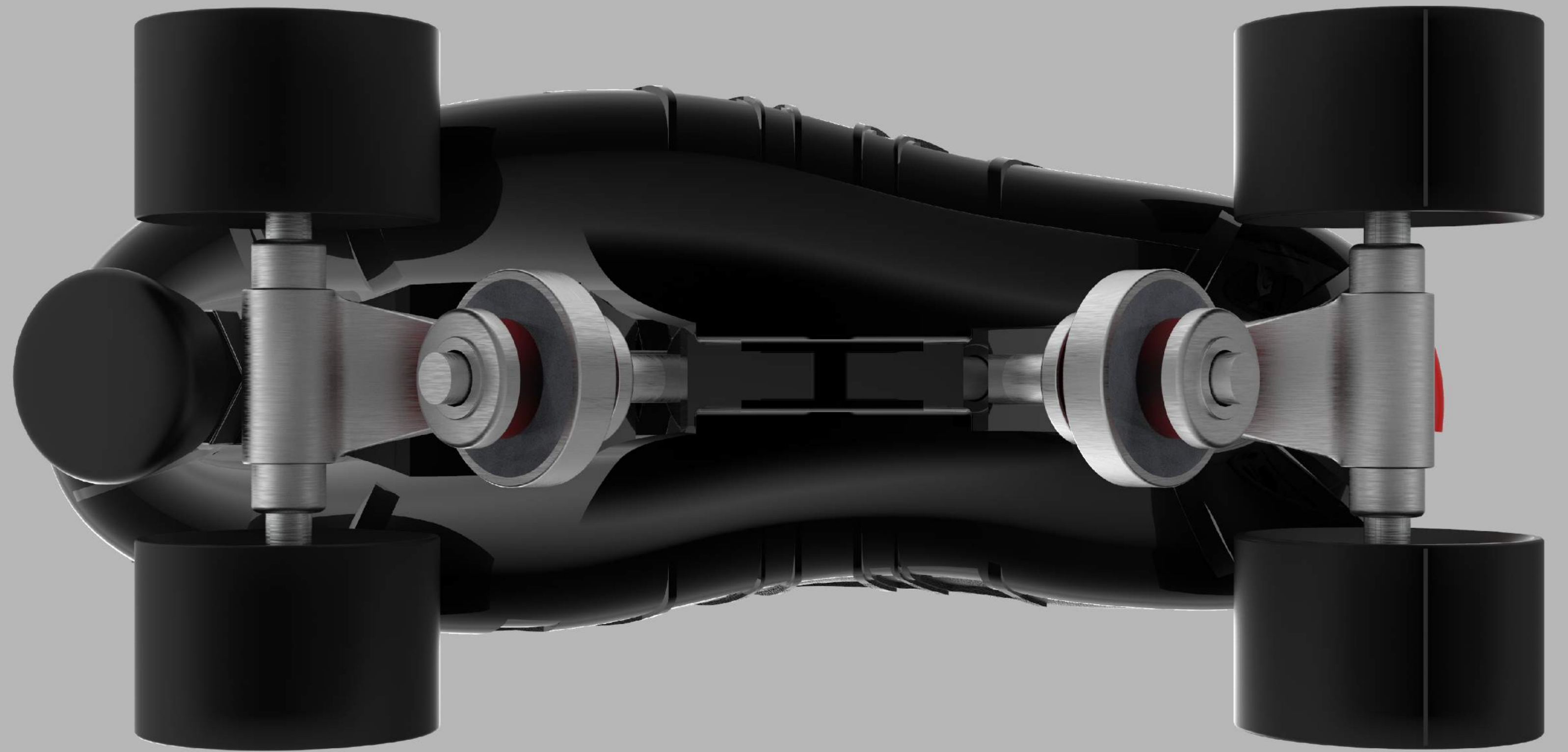
# Generative Design

In the future Skeletal Skates can be manufactured out of 3D printed aluminum with generative design to allow for lighter yet strong skates.



# Skeletal Truss Structures

Truss structures aligning to the center strengthen the plate to reduce breakage





## Lighter Plate

Skate plate is lowered to the ground and provides better center of gravity.







Derby Reimagined with  
**SKELETAL  
SKATES**



# Final Presentation





# other projects

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## Other Work

See more projects at [triciasada.com](http://triciasada.com)



# experience

