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Product Designer



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projects

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



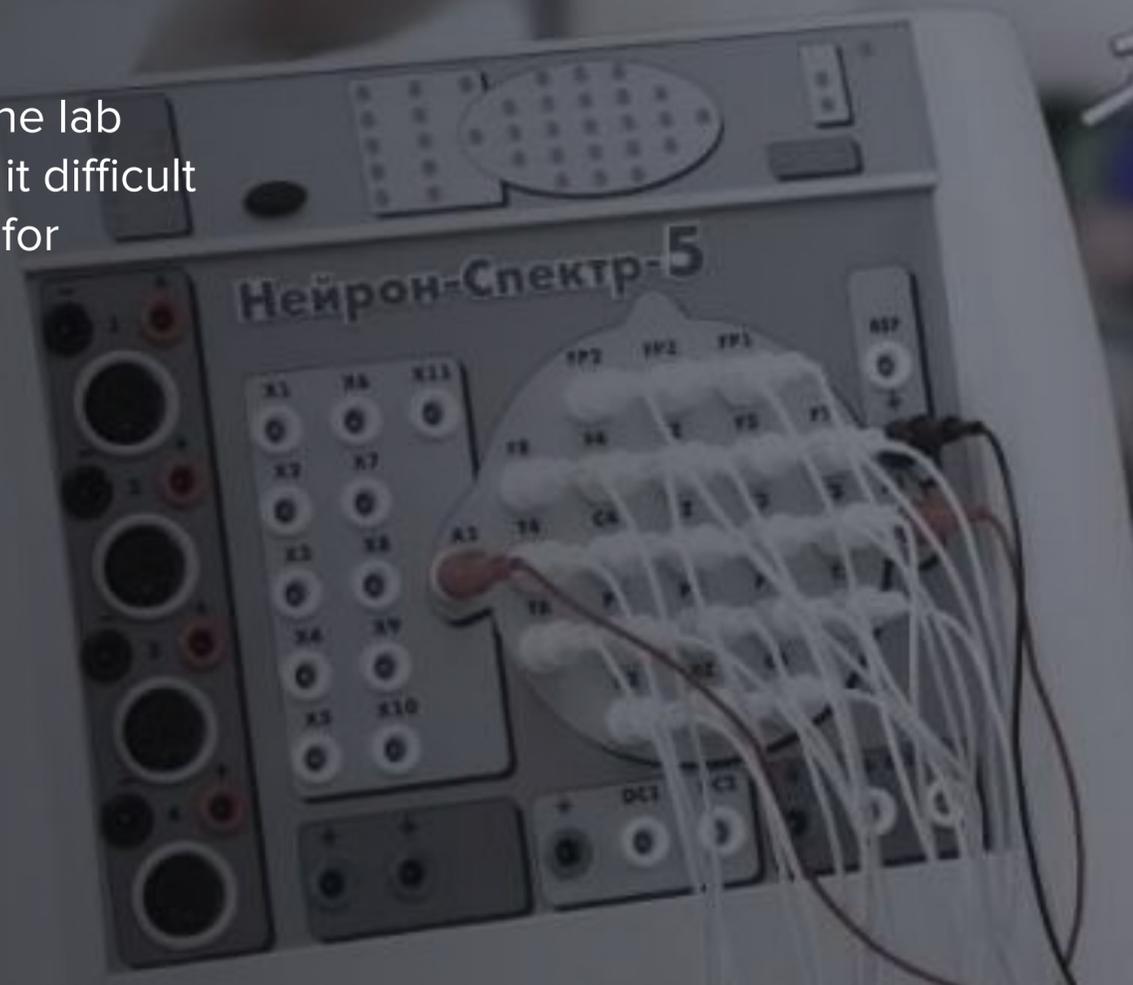
UCLA



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:

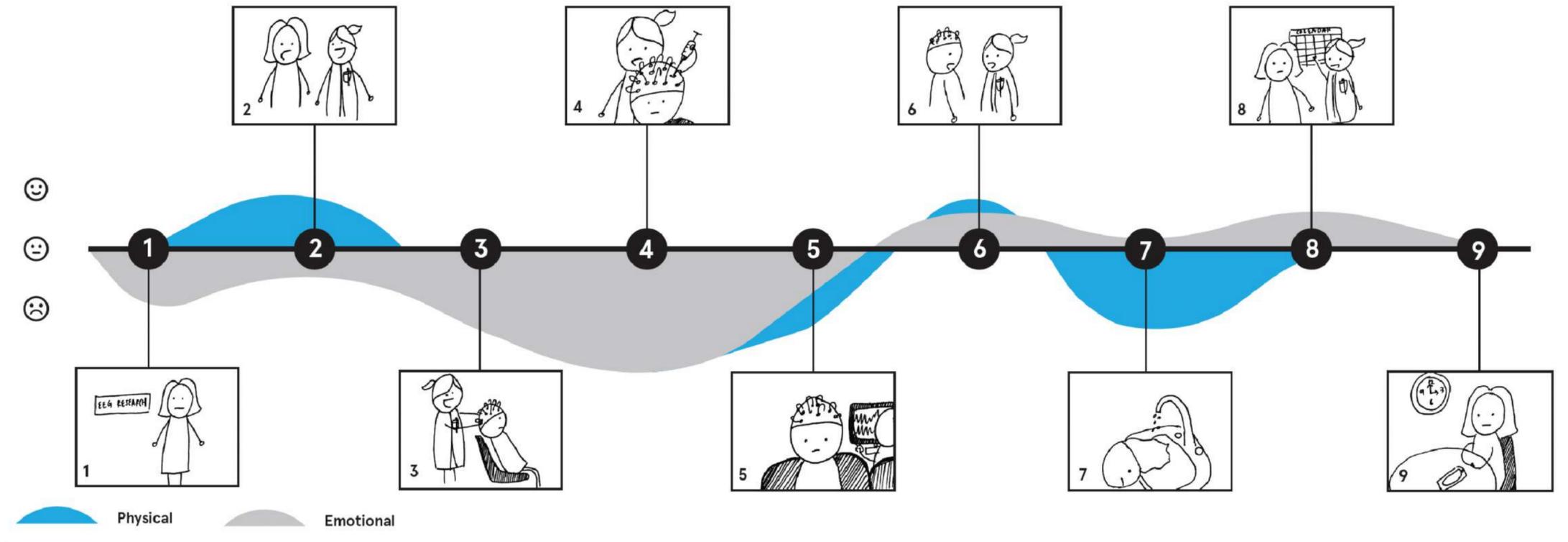
- + Can be worn in public
- + Easy to put on and take off
- + Adjusts to ensure electrodes make contact with scalp on different head shapes



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 feel 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 creen, 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 doing 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.

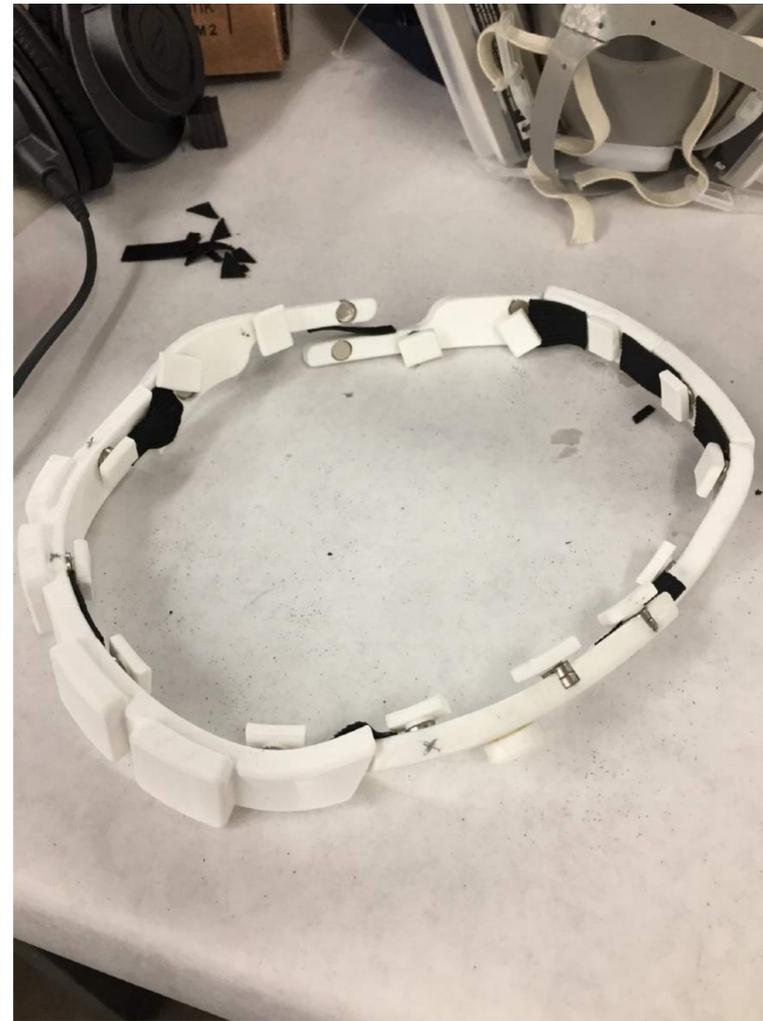
☹️ 😞
- 8** She gets ready to leave and consults with her doctor one more time on a follow-up date that will be listed with better results

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

☹️ 😞

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 band to allow for more EEG placement

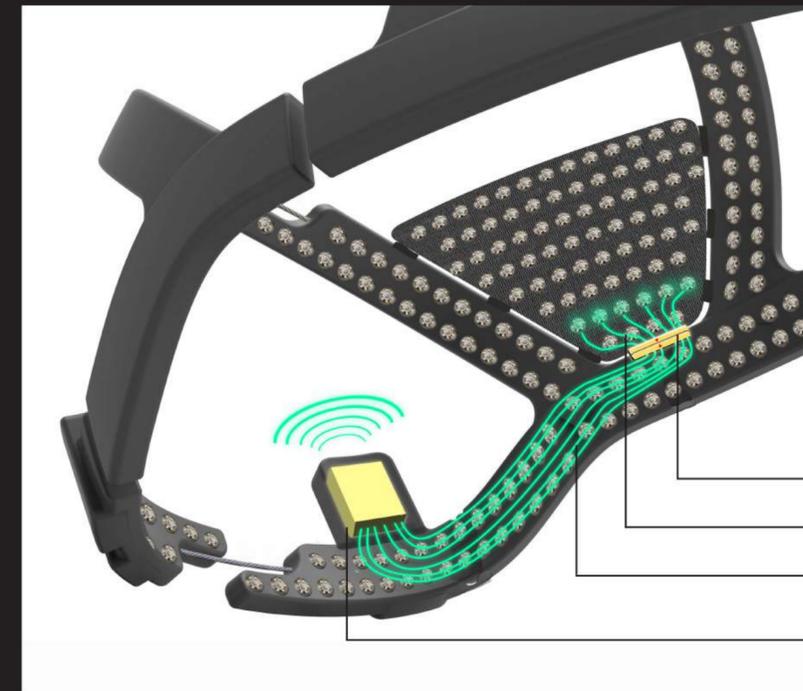


We decided on a skeletal framework with patches that ensure electrode contact

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

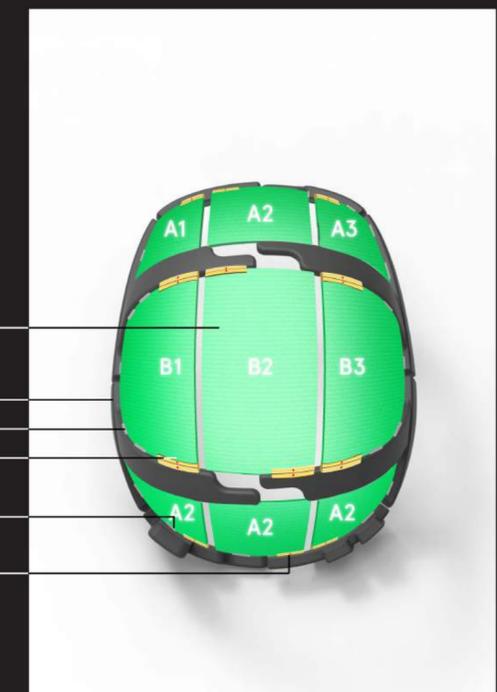
9-Panel Modular System

4 Way Stretch Material

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

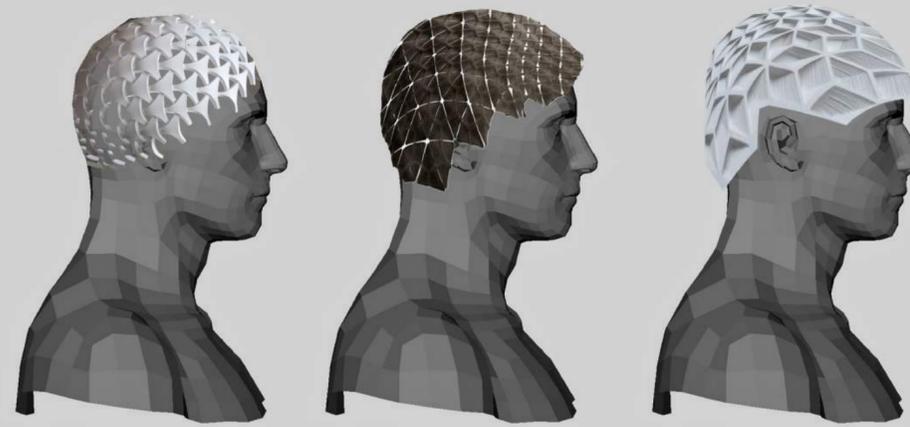
Positioning Clips

Electrode-Wire plugs

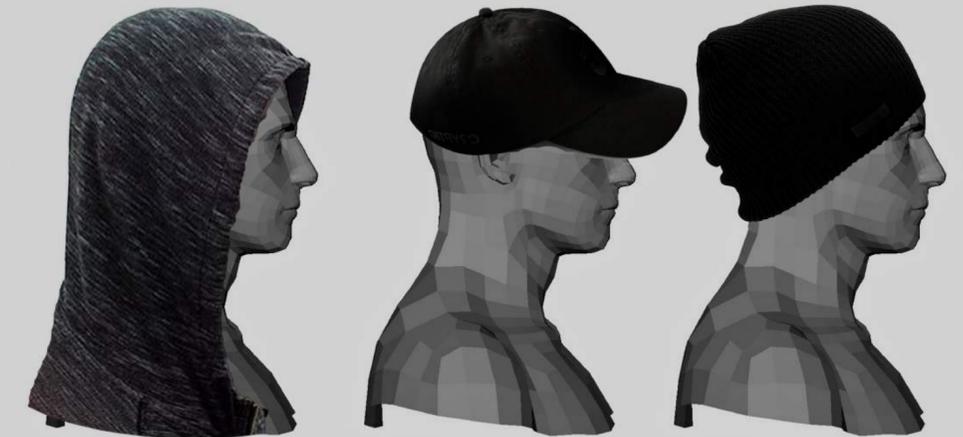


Experimental Ideation to Push

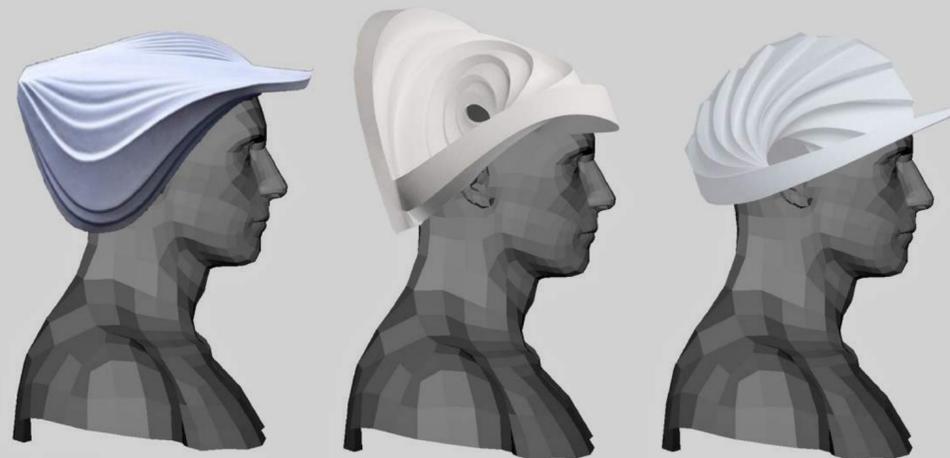
We broke our normal process and explore found objects to find creative solutions, leading us to find wig caps as the key solution to compression.



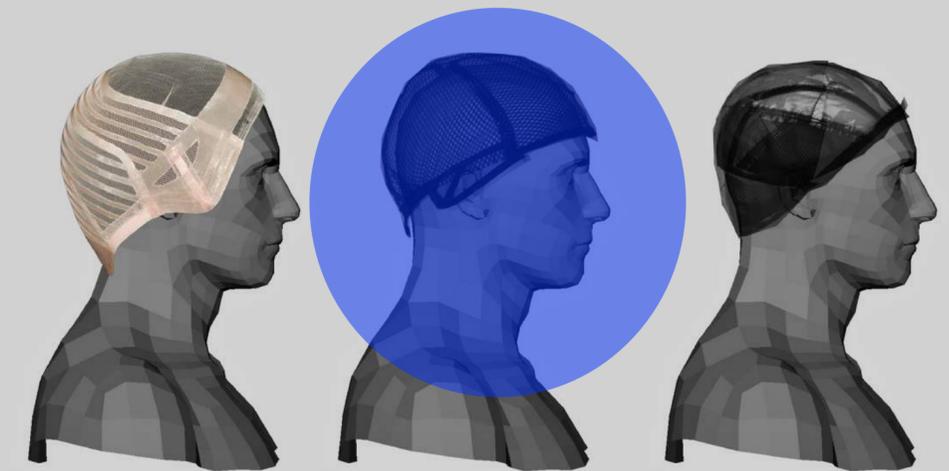
modular. origami. multifaceted.



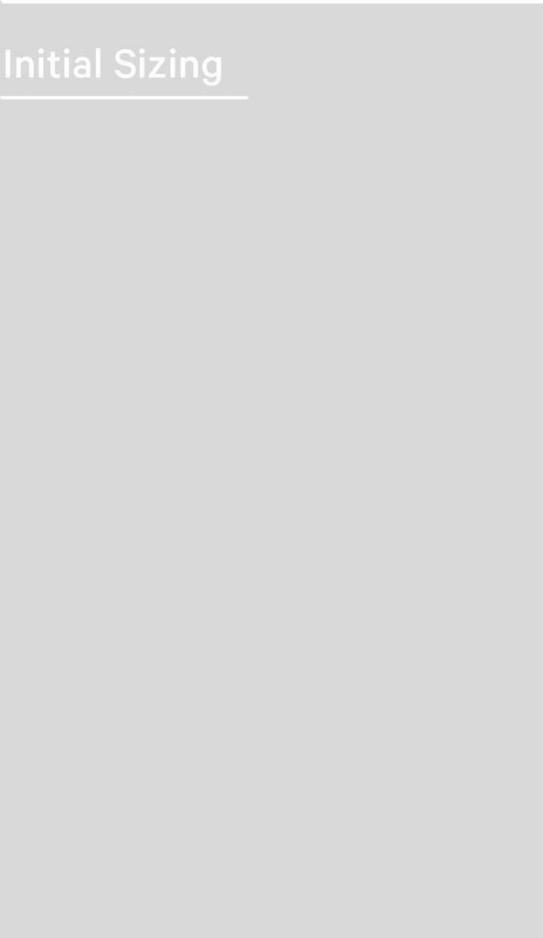
fully concealed EEG.



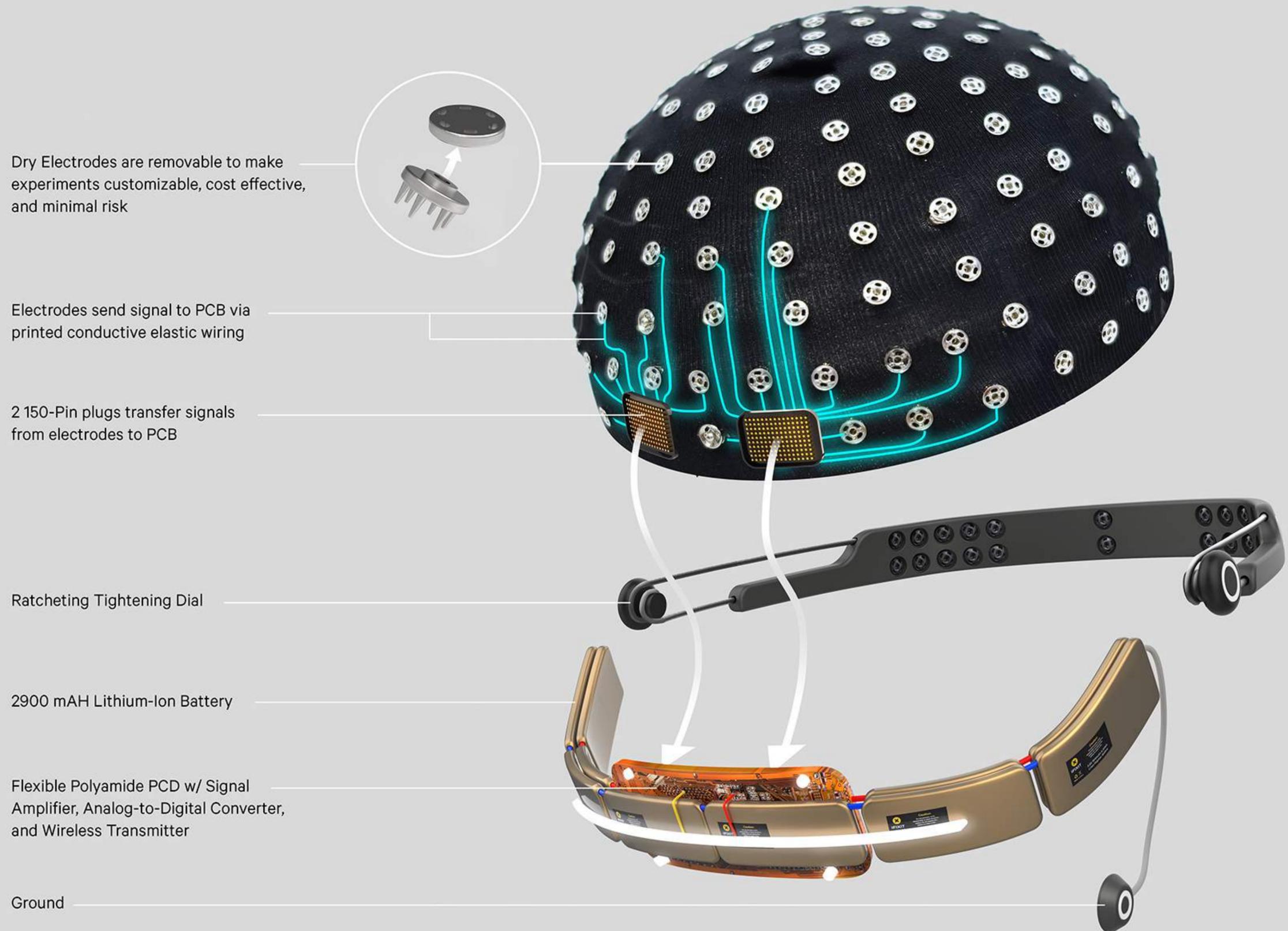
parametric. hardware. statement piece.



concealing EEG through wig caps.



+ Pioneering the future for brain exploration





Final Model

We prototyped a final physical model for the client presentation

Our Team



work in progress

future of pregnancy

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



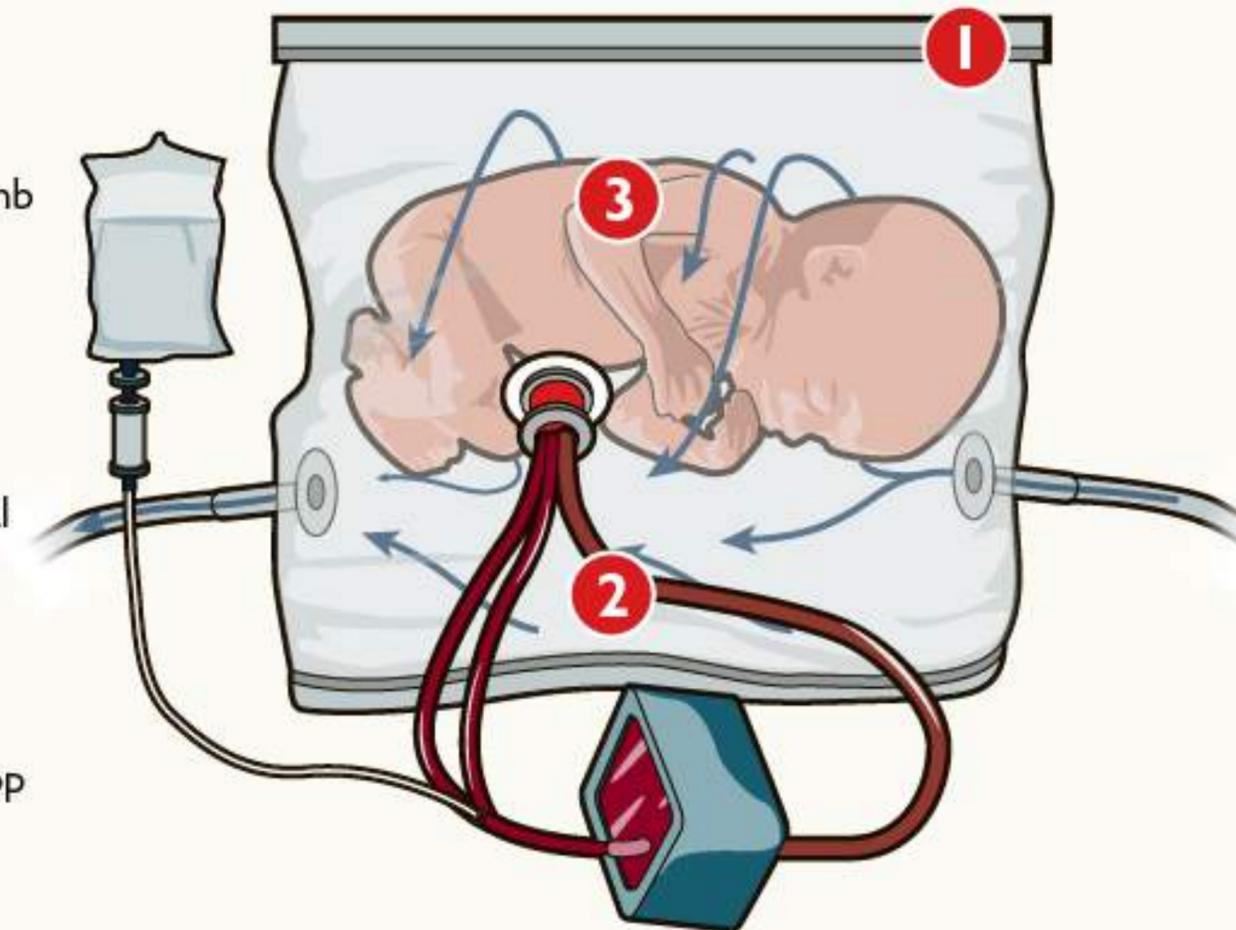
artificial womb tech can revolutionize neonatal care

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



How it works

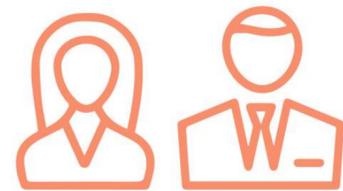
- 1** Foetus transferred into fluid-filled bag mimicking the womb
- 2** Its heart pumps oxygenated blood through an artificial placenta
- 3** Organs can develop with minimal exposure to pathogens



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

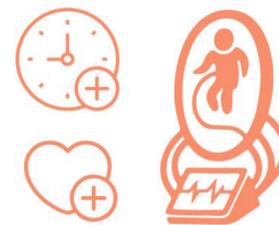
First this technology will be used to help premature babies survive and help mother who cannot conceive to have children of their own.

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?

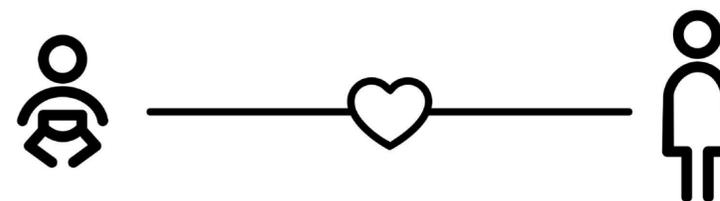
This technology brings up the questions towards the nature of womanhood when the natural distinction of femininity is taken away

meet luv



future problem:

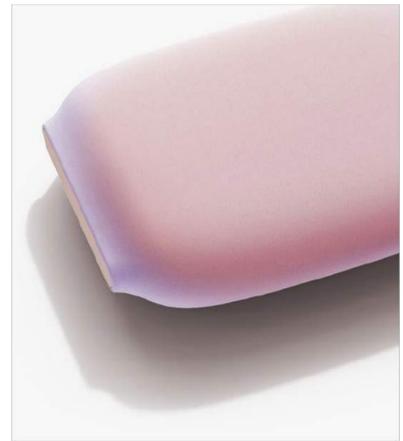
When the mother is separated from the child there is a need to recreate the parent-child emotional & physical bond



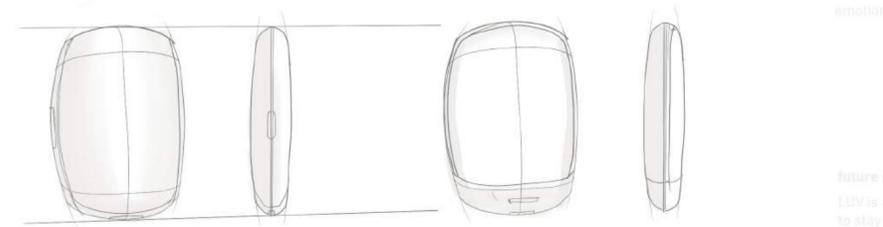
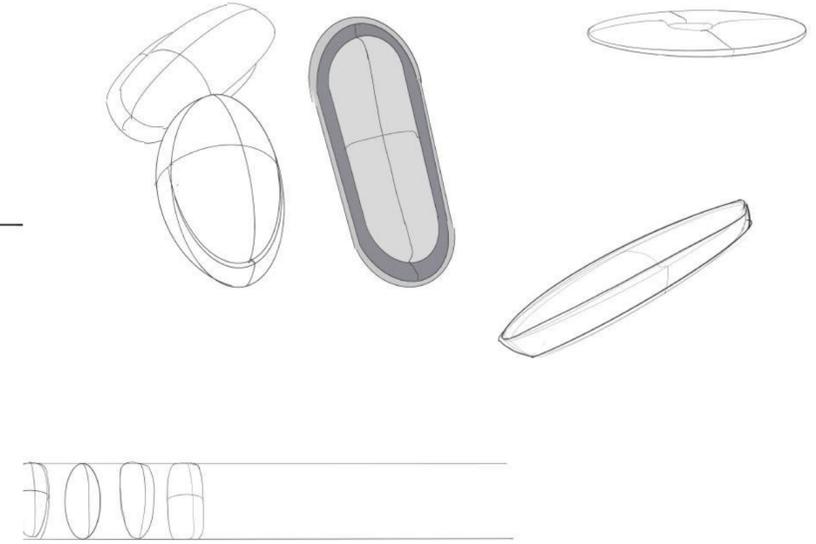
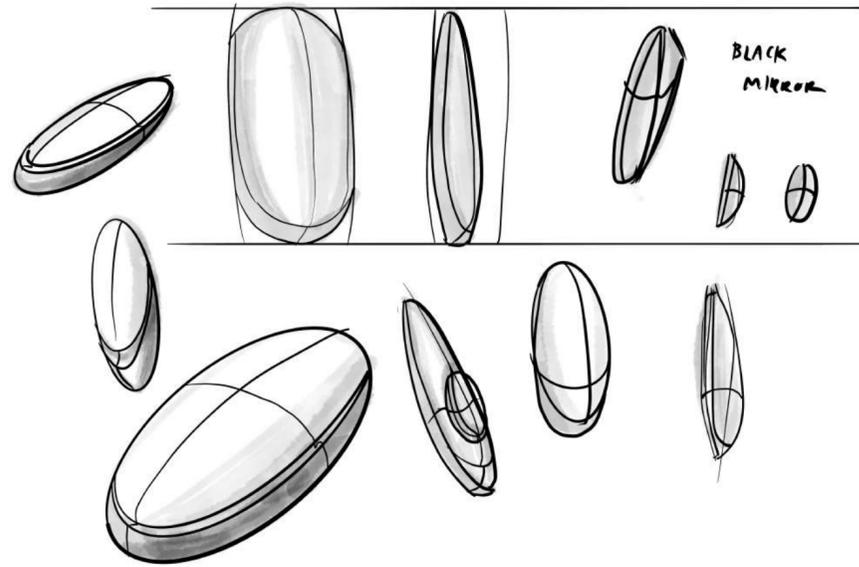
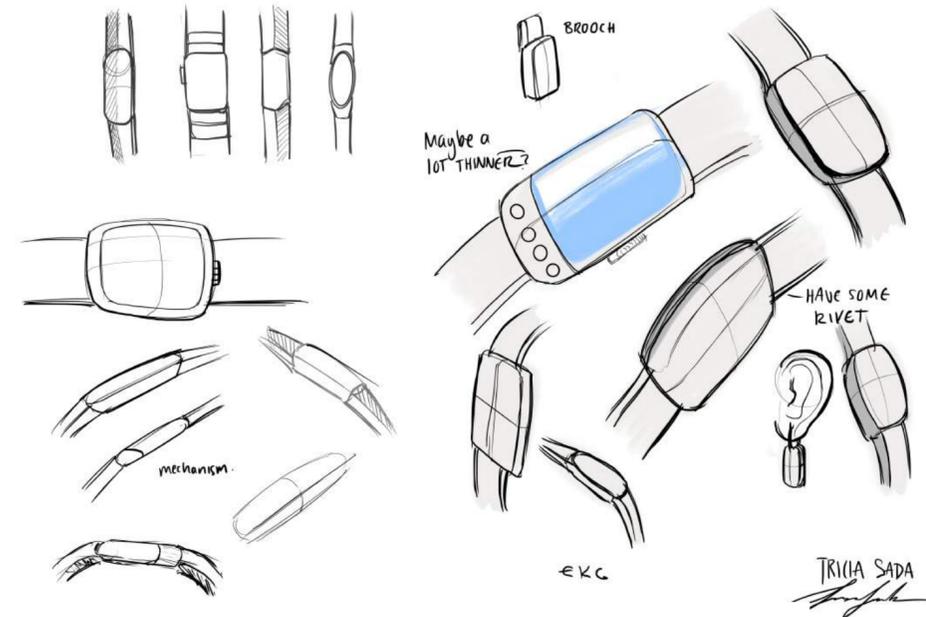
future solution:

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

moodboard

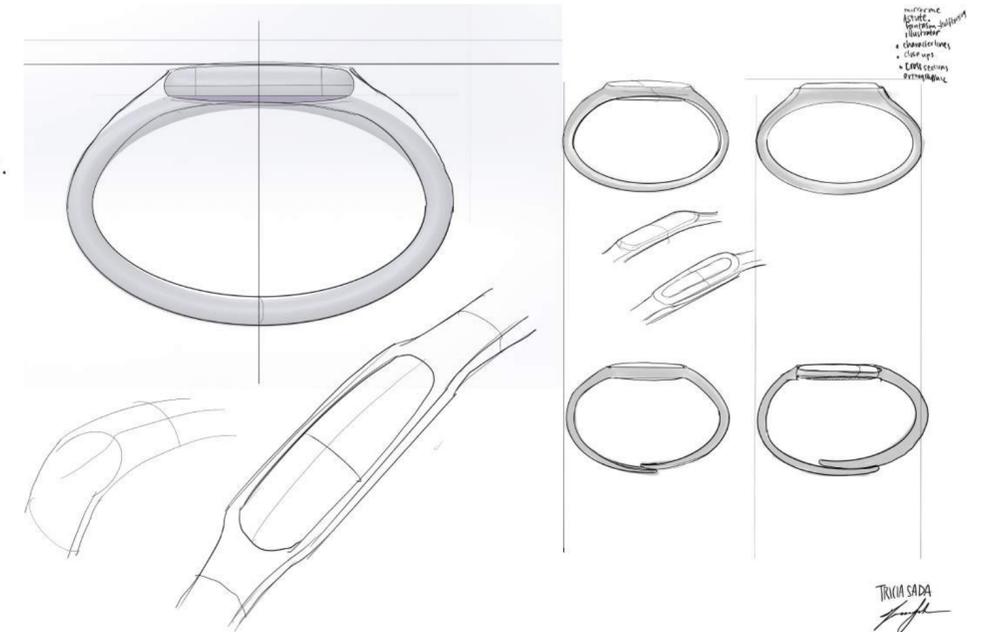
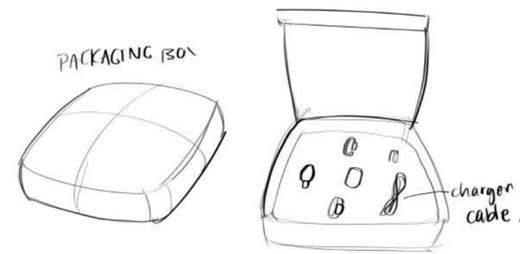
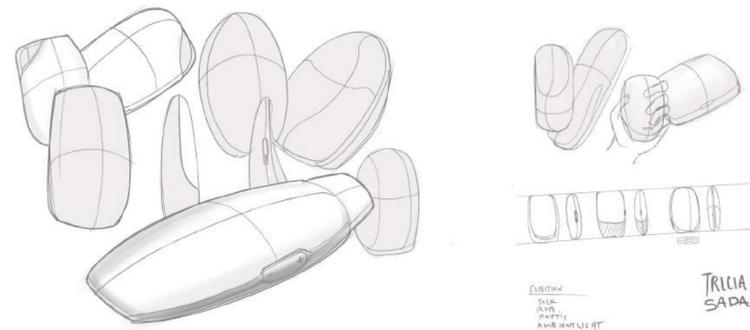
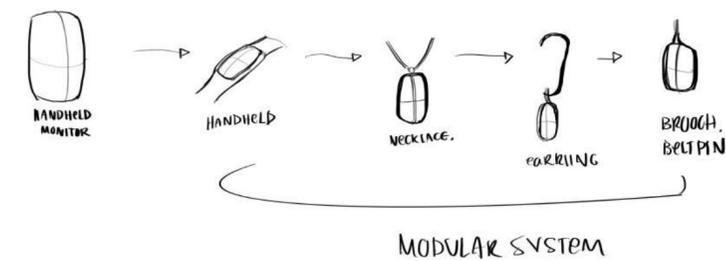


sketches

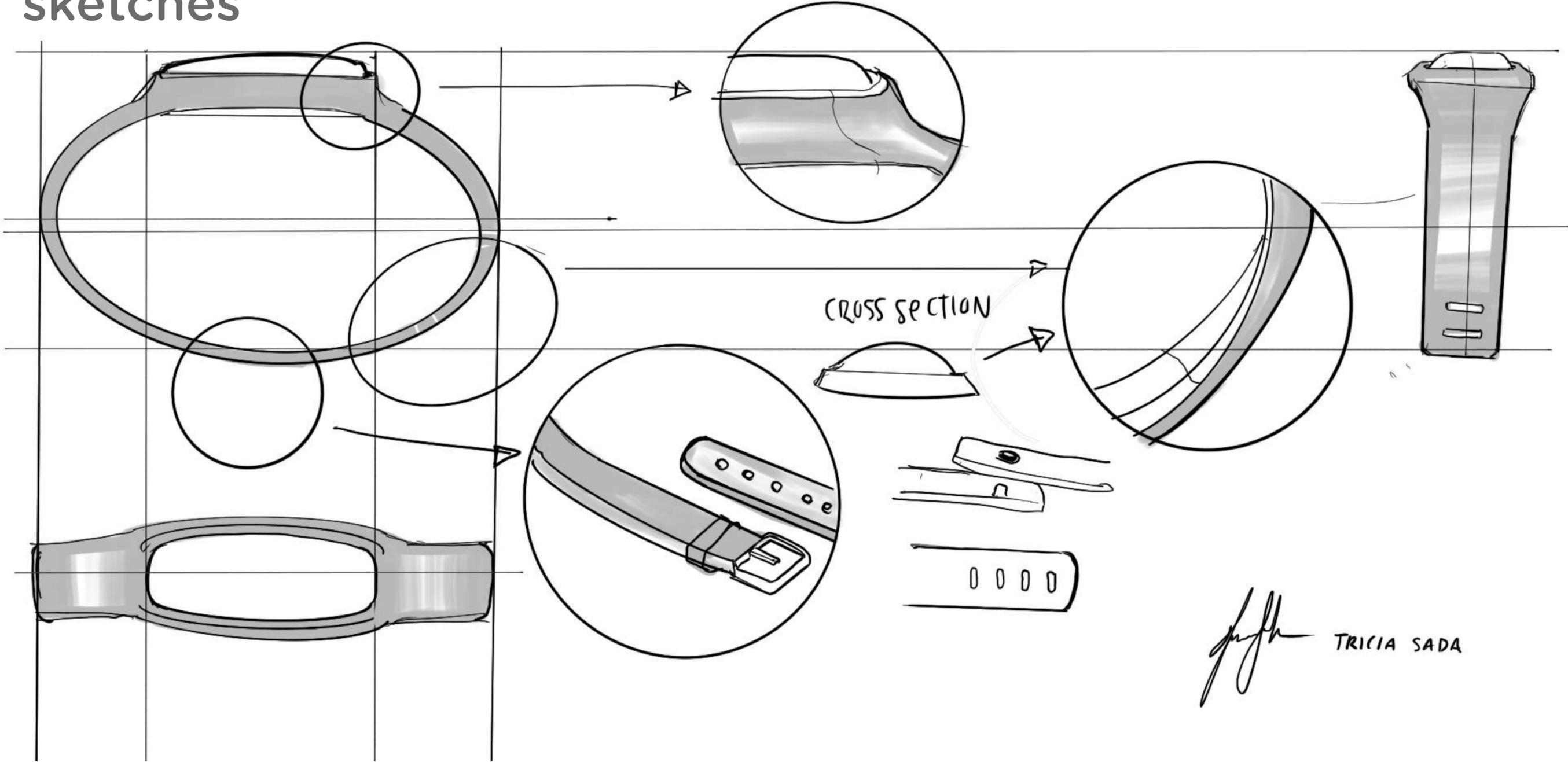


When it
there is
smaller

future
to stay



sketches

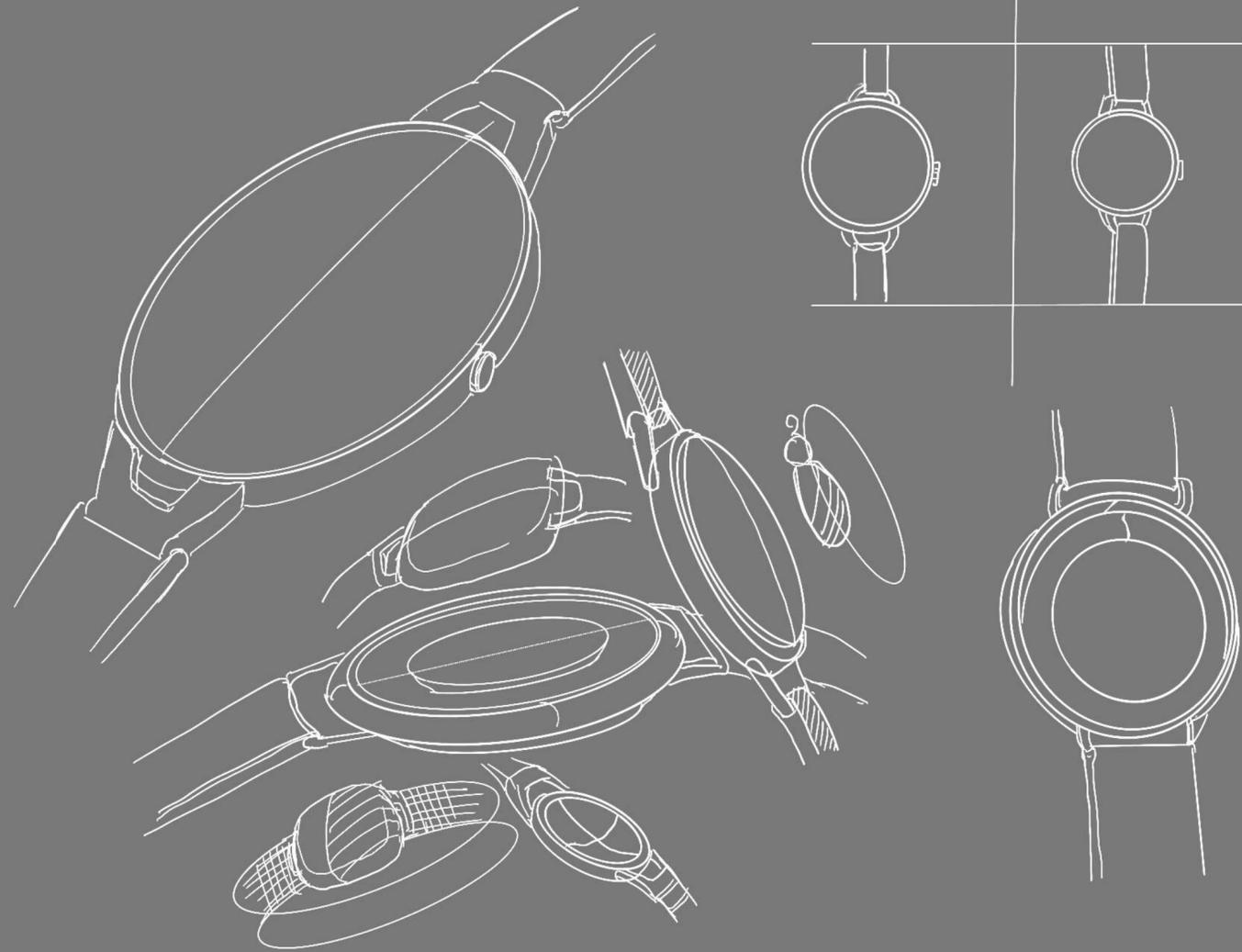


Tricia Sada TRICIA SADA

mockups



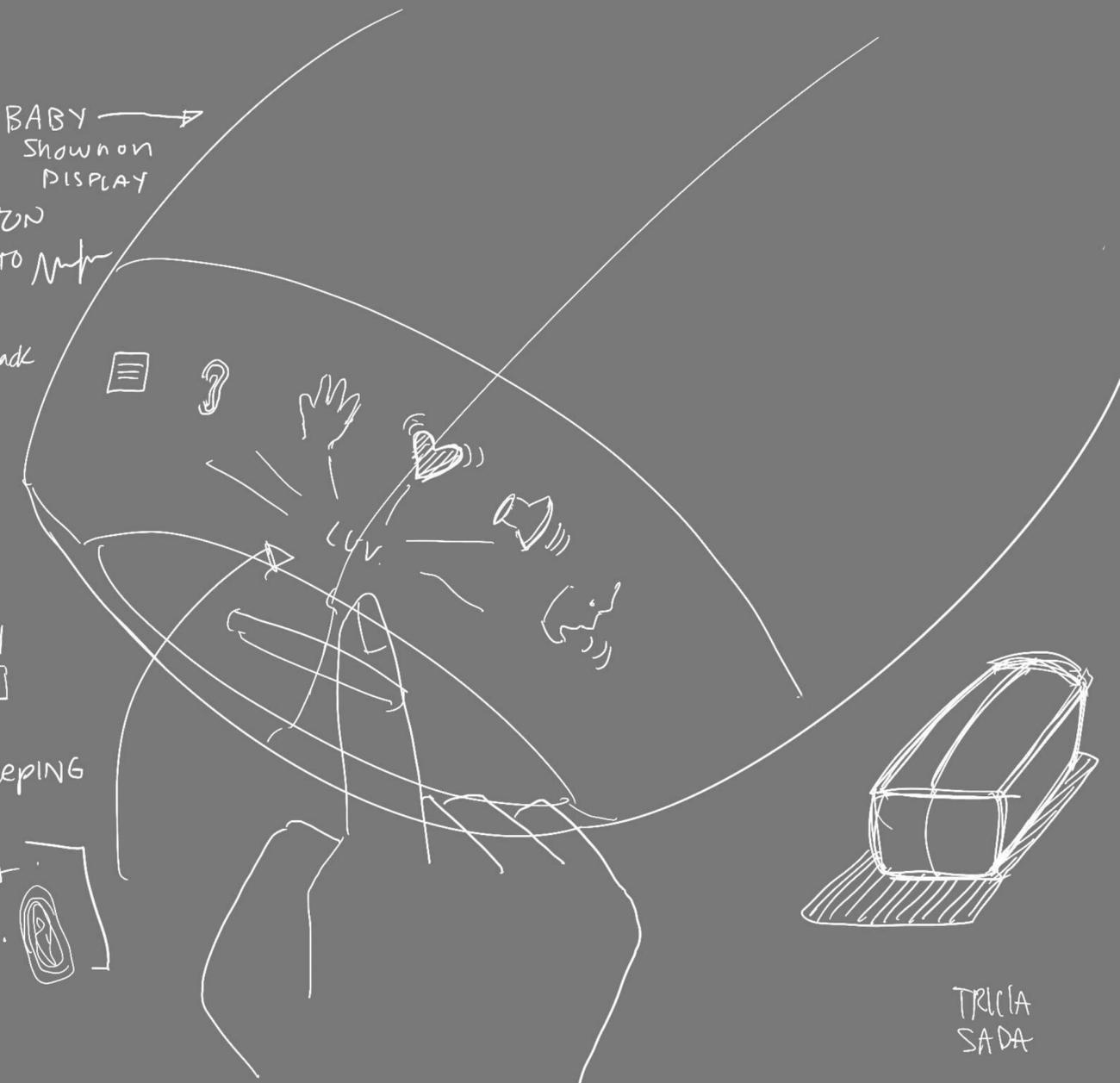
sketches



TRICIA SADA

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

Fingerprint
enabled.

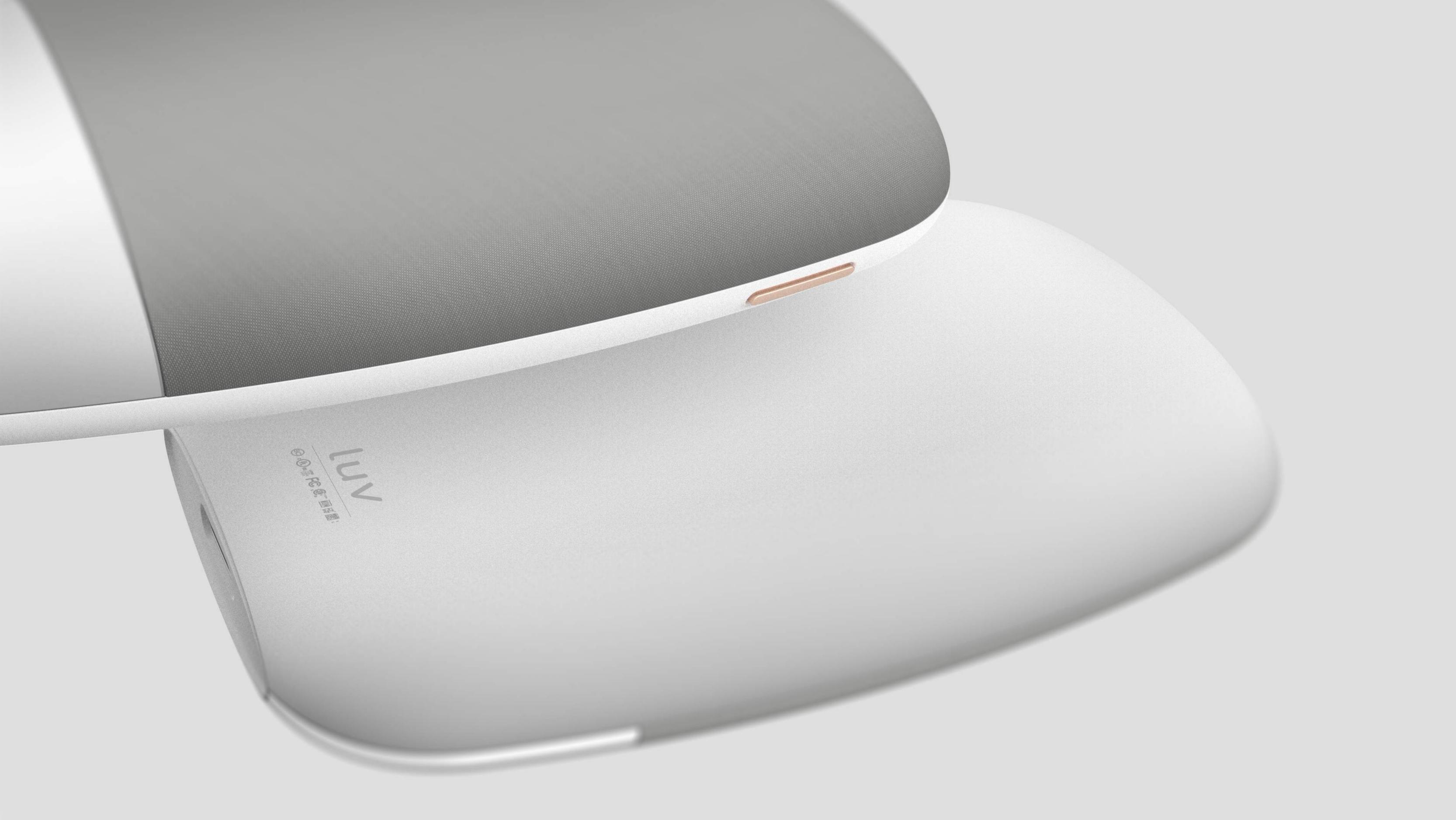


TRICIA SADA



listen to baby
send heartbeat
touch baby





lenovo
© 2014 Lenovo Corporation

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

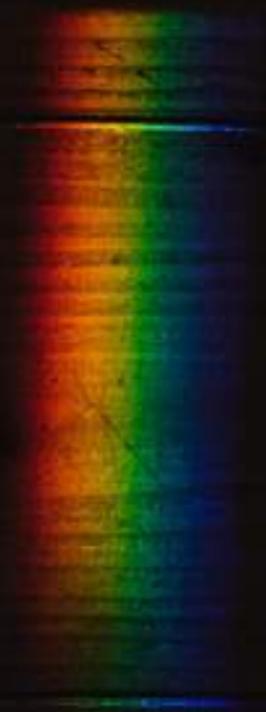
Epson is known for its printers and inks, but it has seemingly low-cost packaging that doesn't reflect its premium quality prints.

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

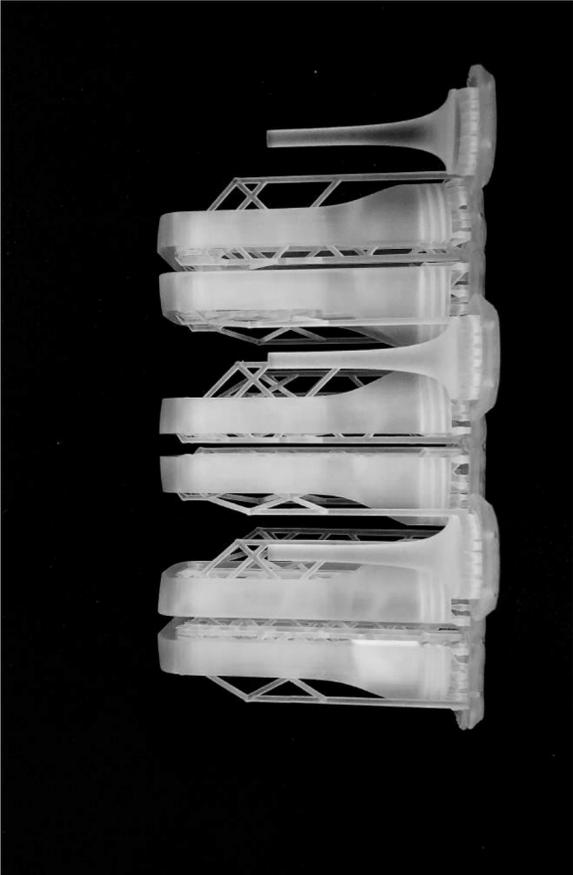
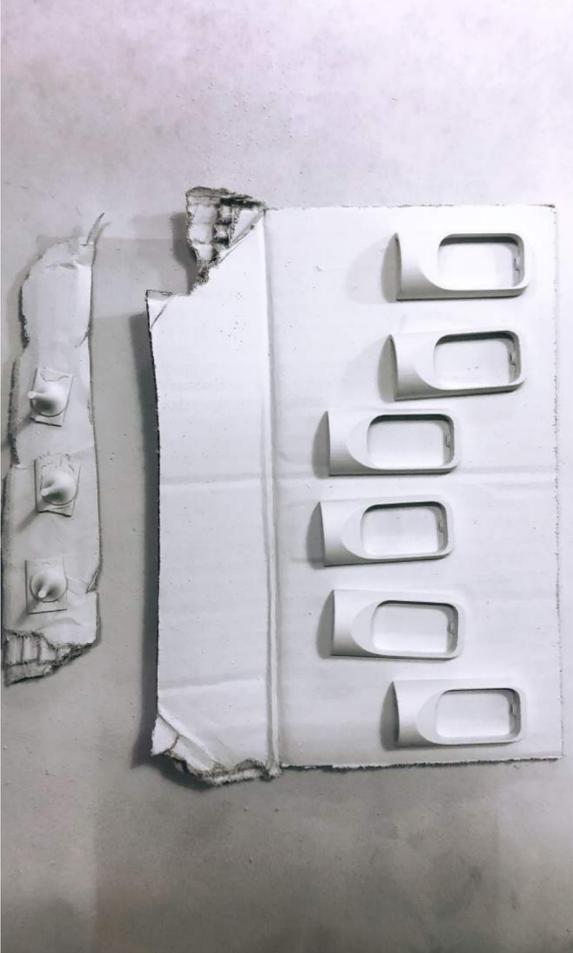
Creating exciting moments for creatives opening ink packaging



Tricia Sada
TRICIA SADA

Making Process

Bringing it to life



skeletal skates

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



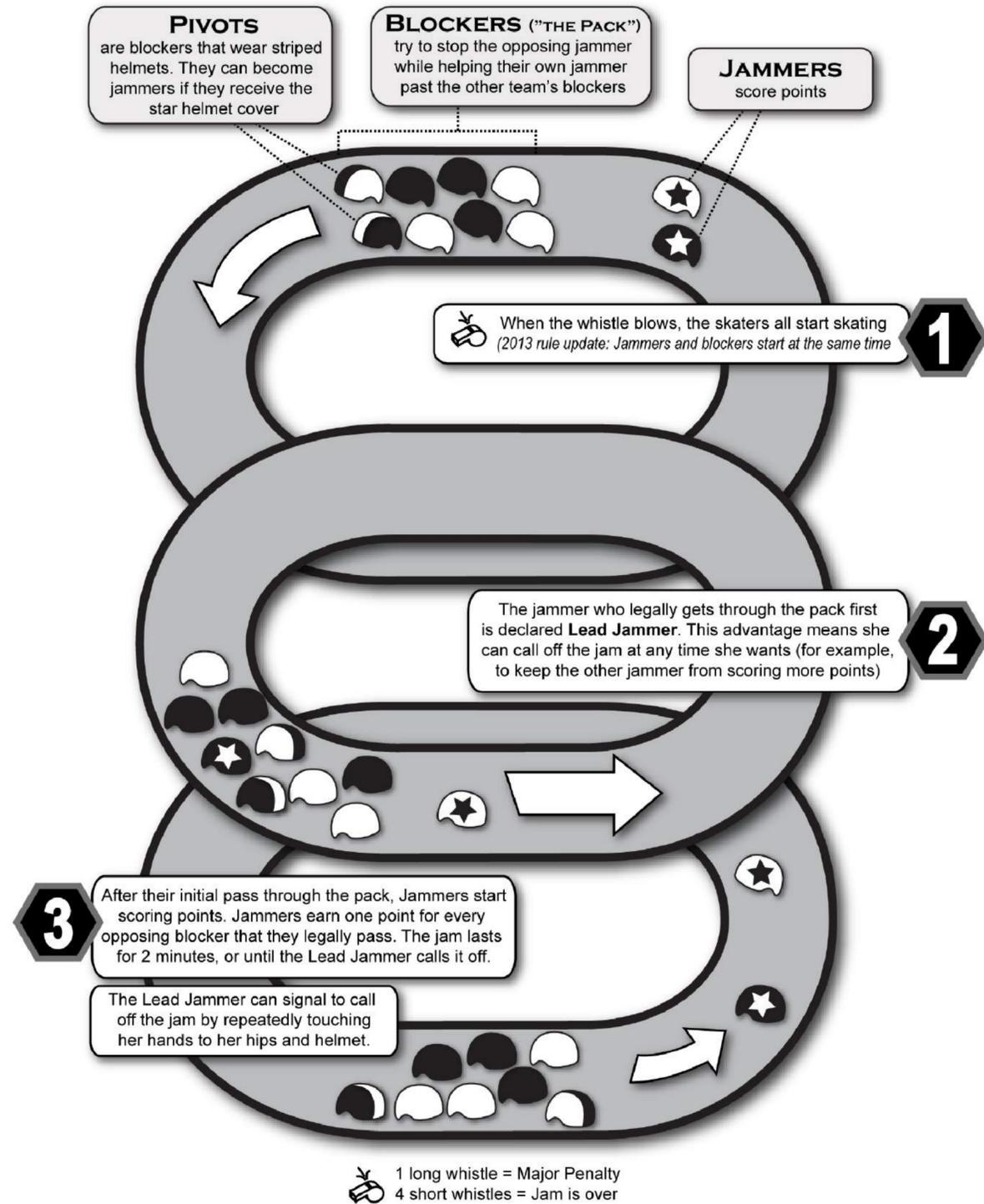
Derby Reimagined with
**SKELETAL
SKATES**



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



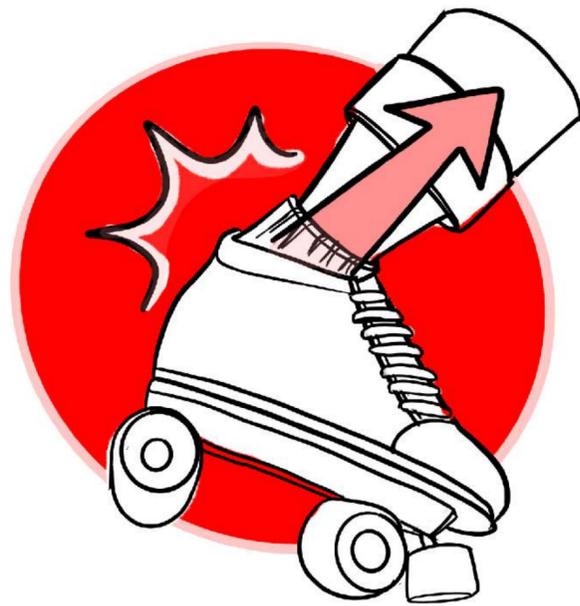
BATTY

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.

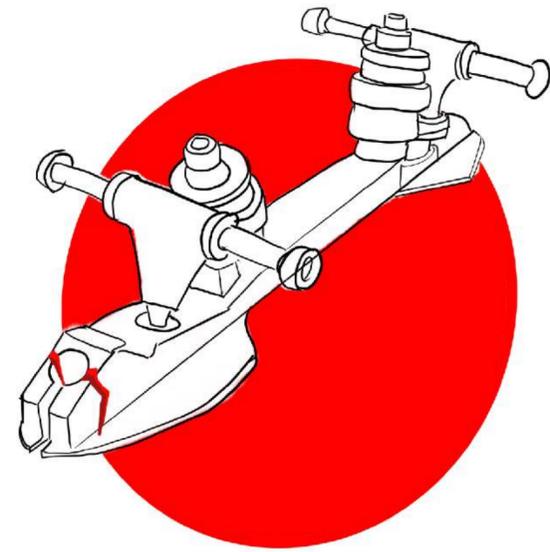
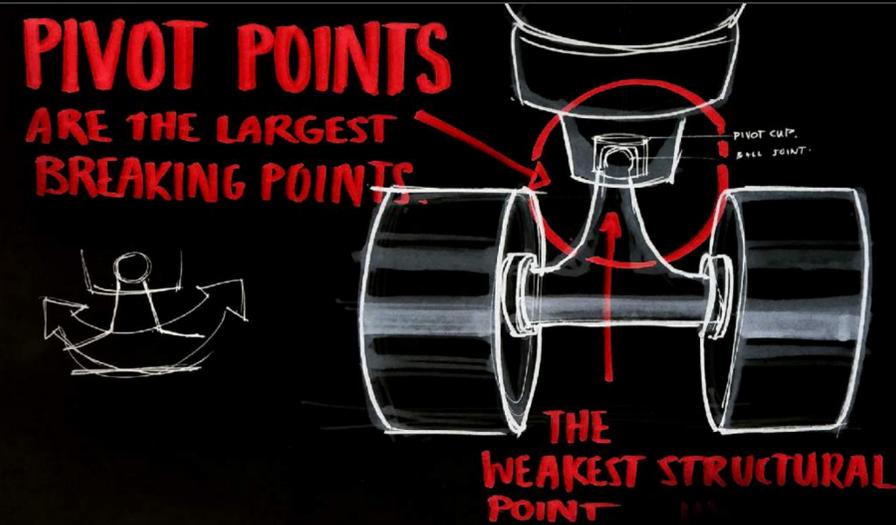


Plate Breakage

Plate breakage is mentioned 3 times

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

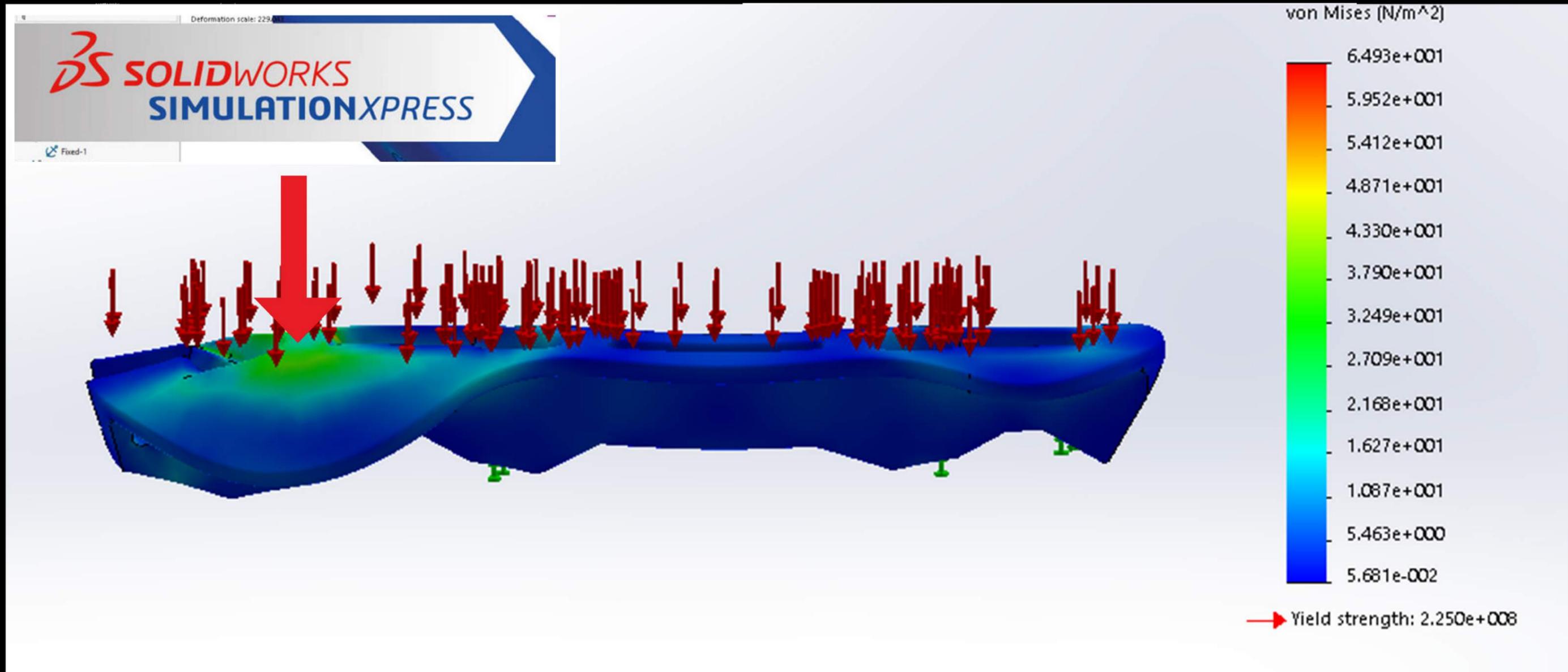


Player mentioned **breakage**

Skate Shop owner mentioned **breakage**

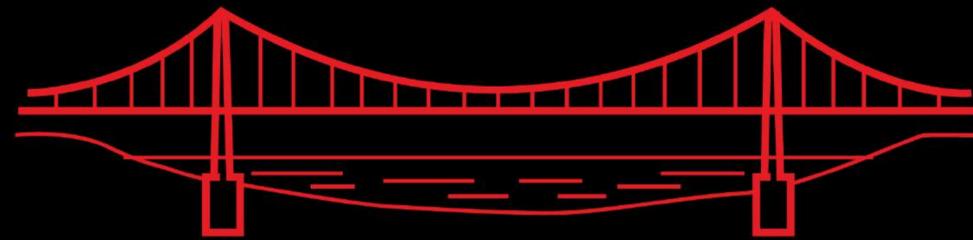


Solidworks force simulation reveals same **breakage** point.

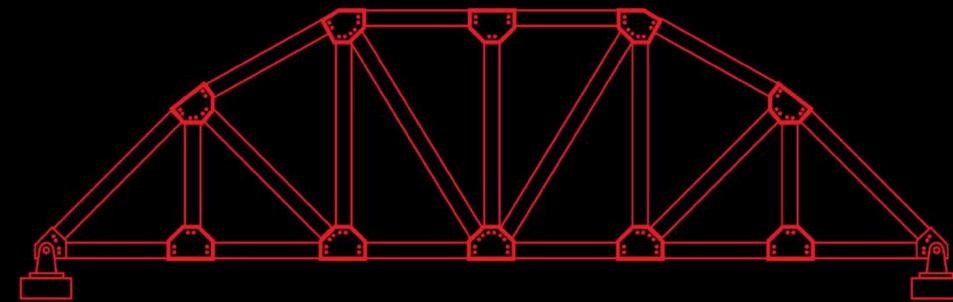


How can we strengthen the skate plate?

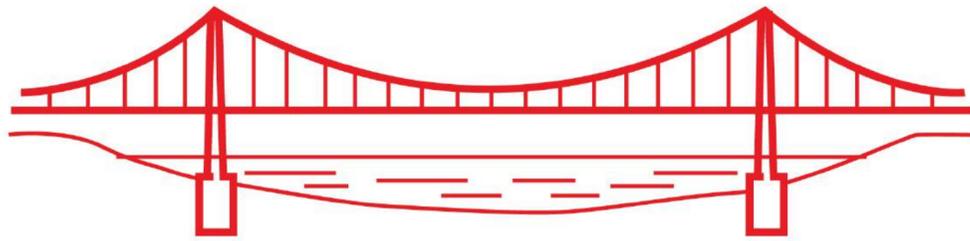
Lets get inspired by bridges.



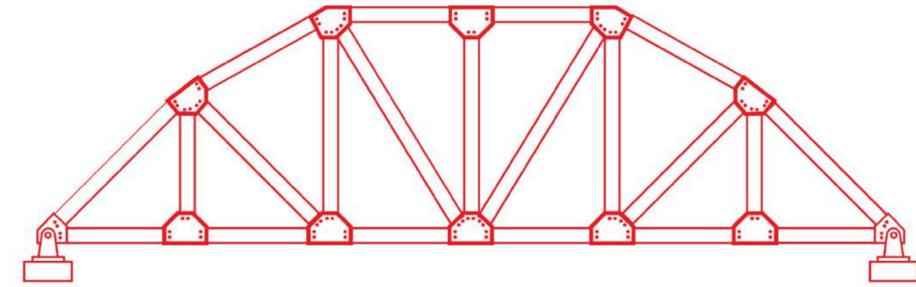
Suspension Bridge



Truss Bridge



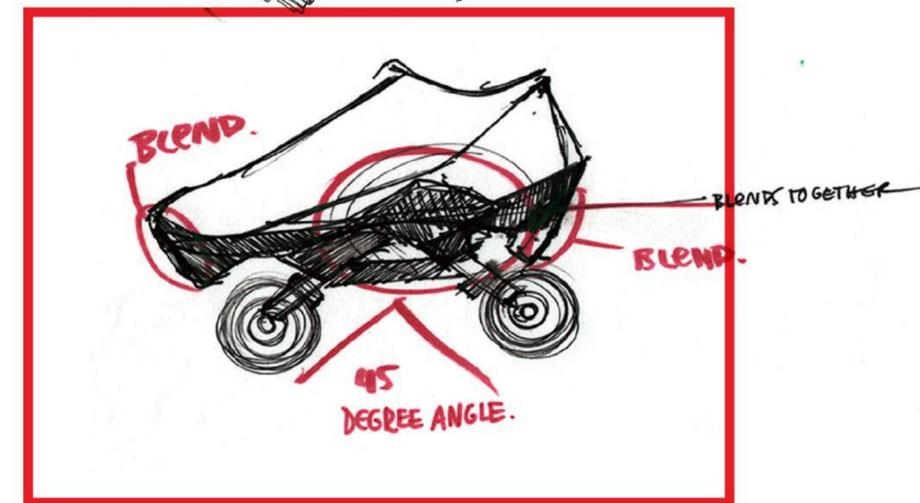
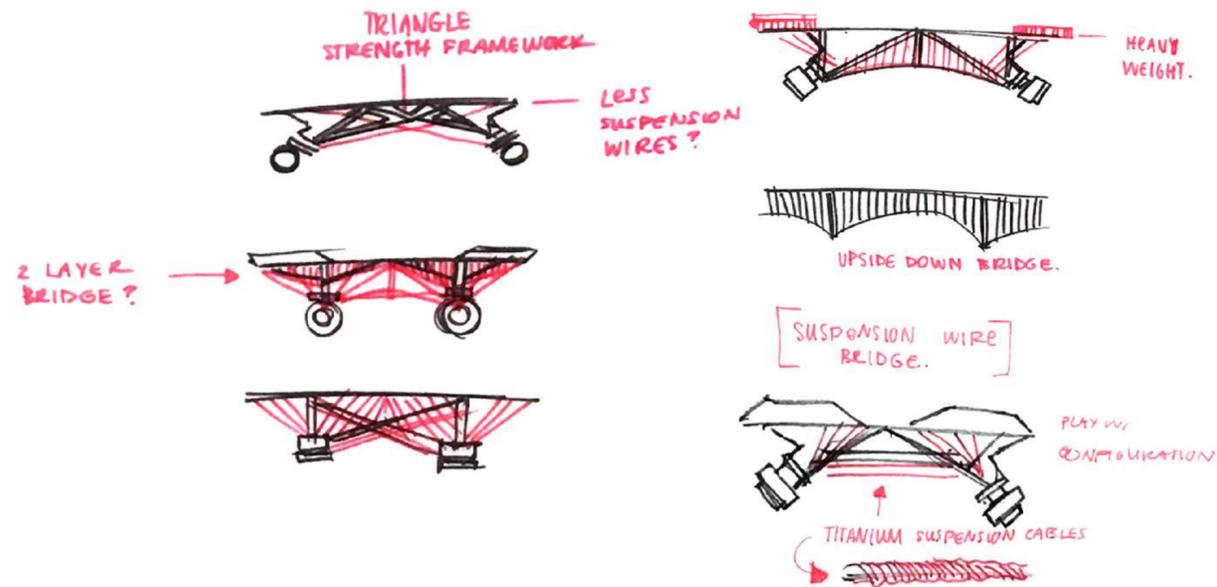
Suspension Bridge



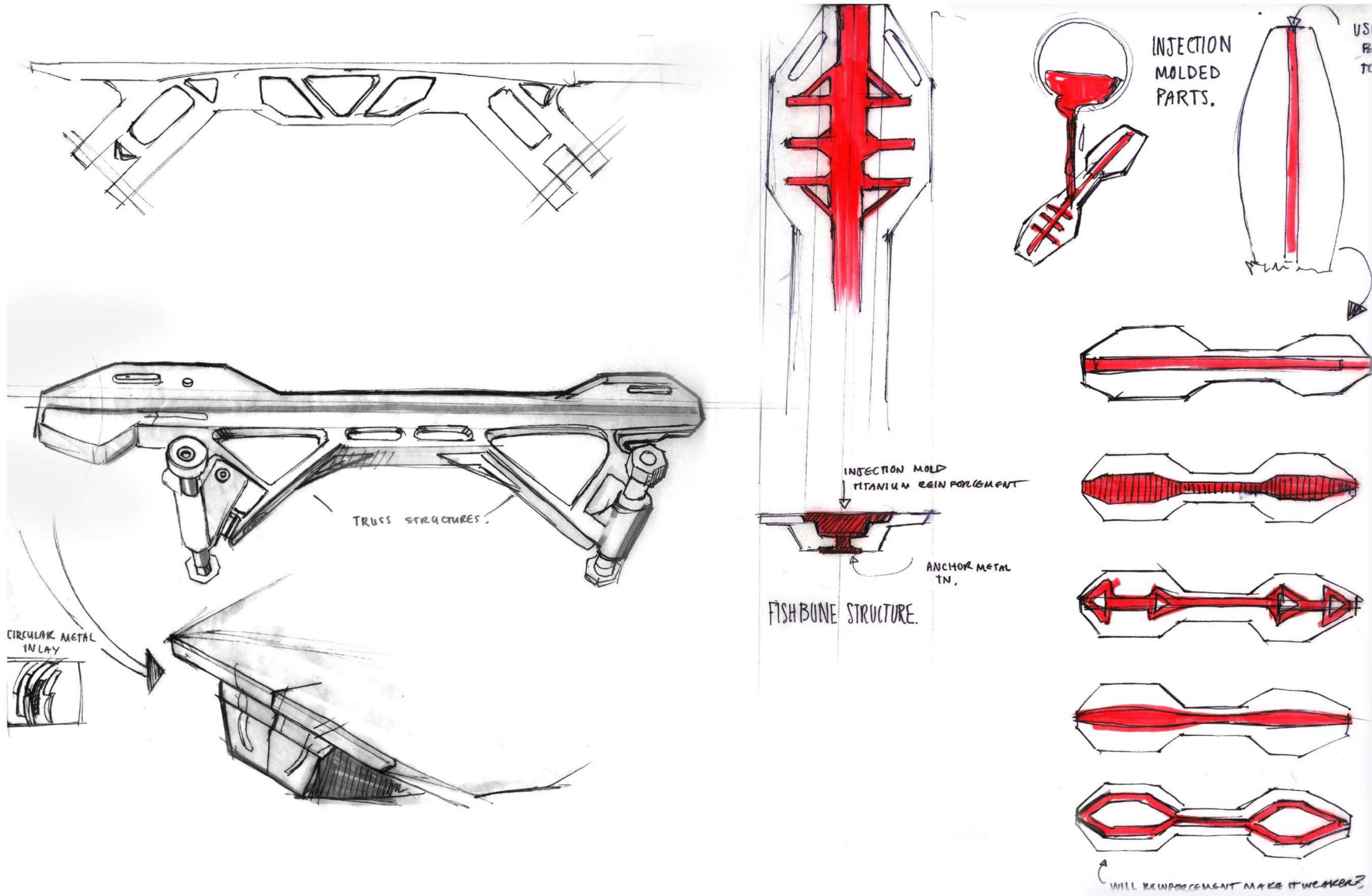
Truss Bridge

Problem: Wires might scratch and injure other players

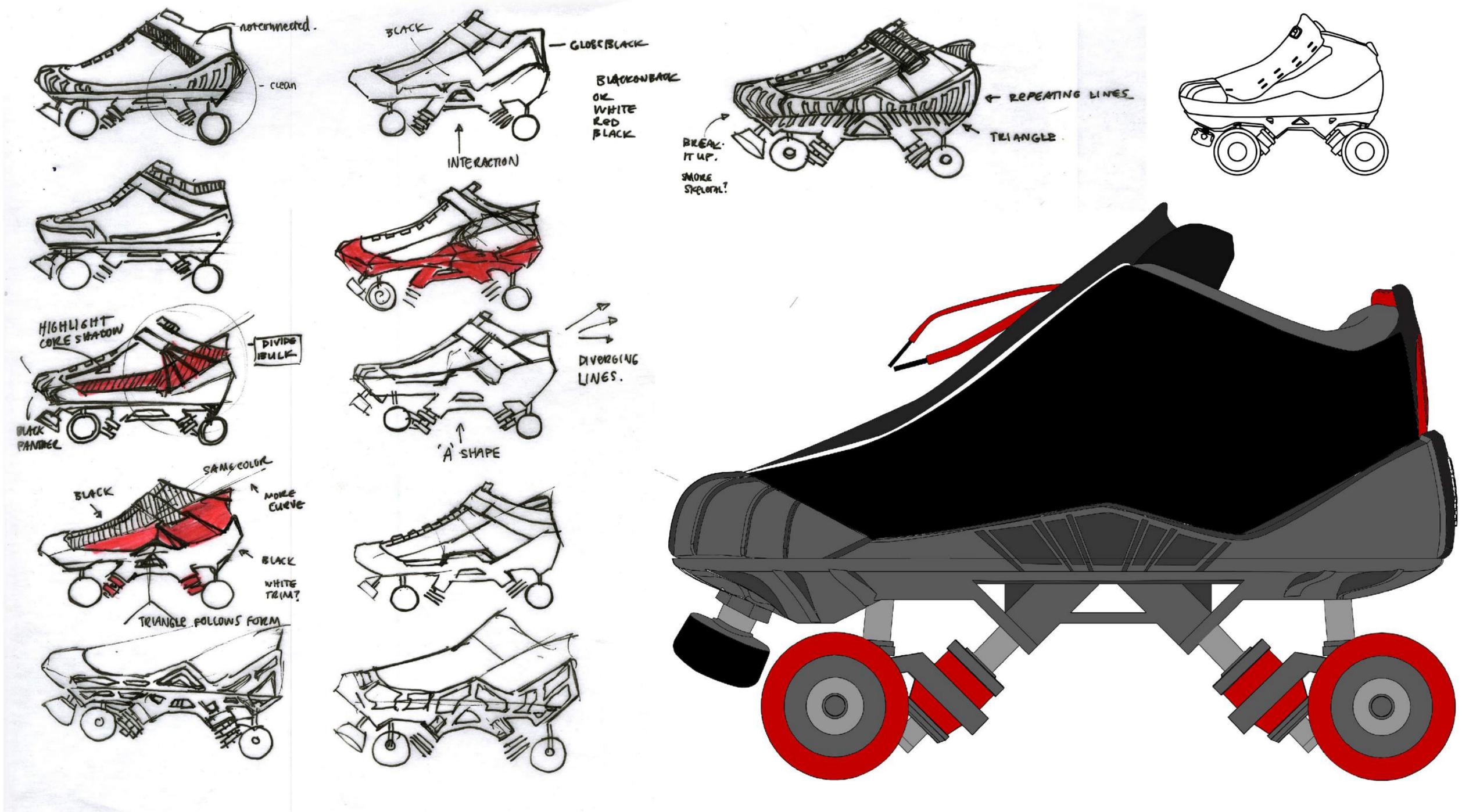
Truss structures seem to provide the best support

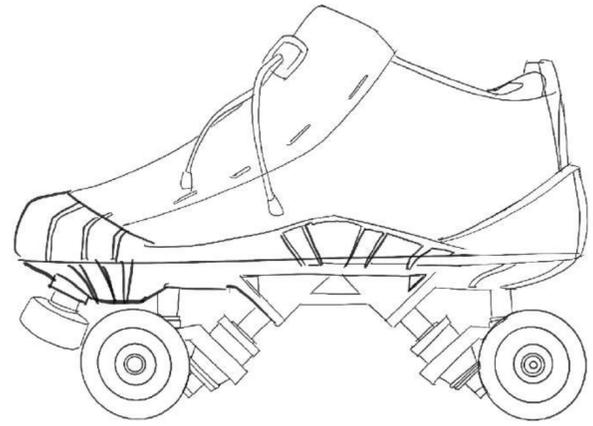


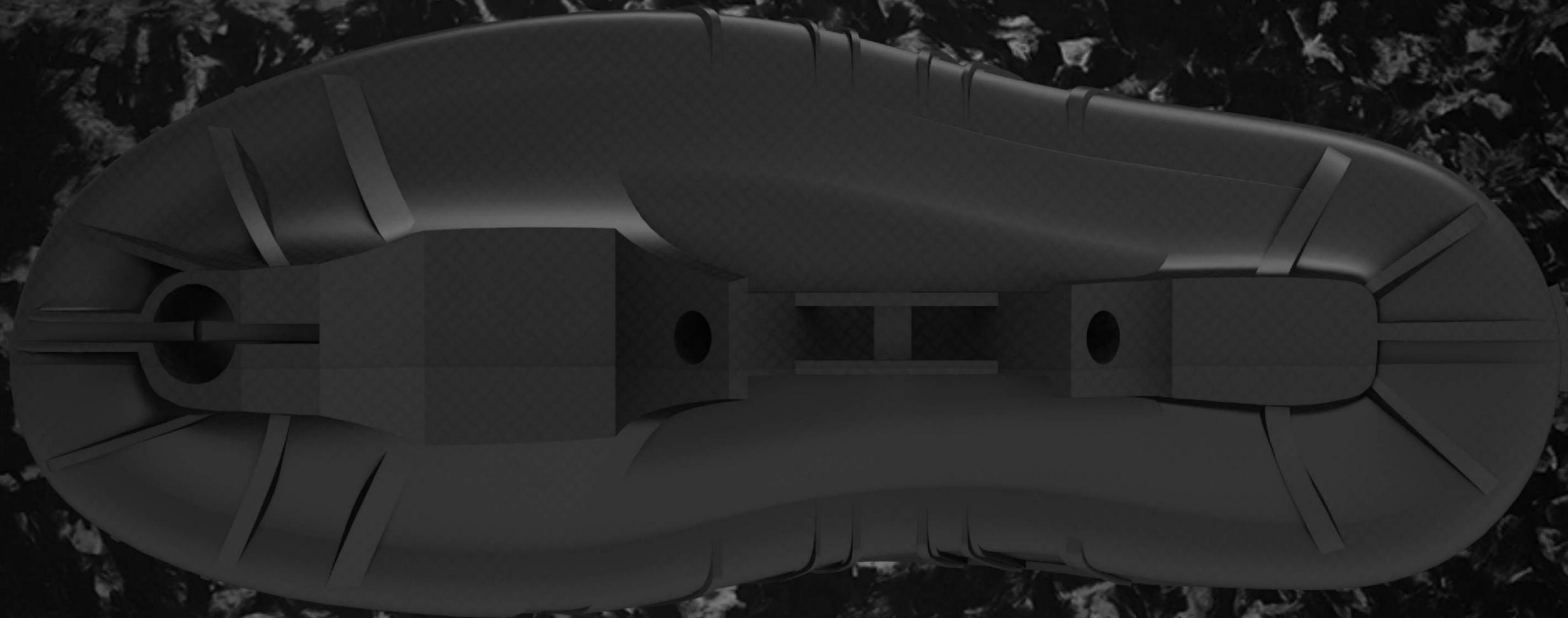
How can we add trusses to fortify the skate?



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.

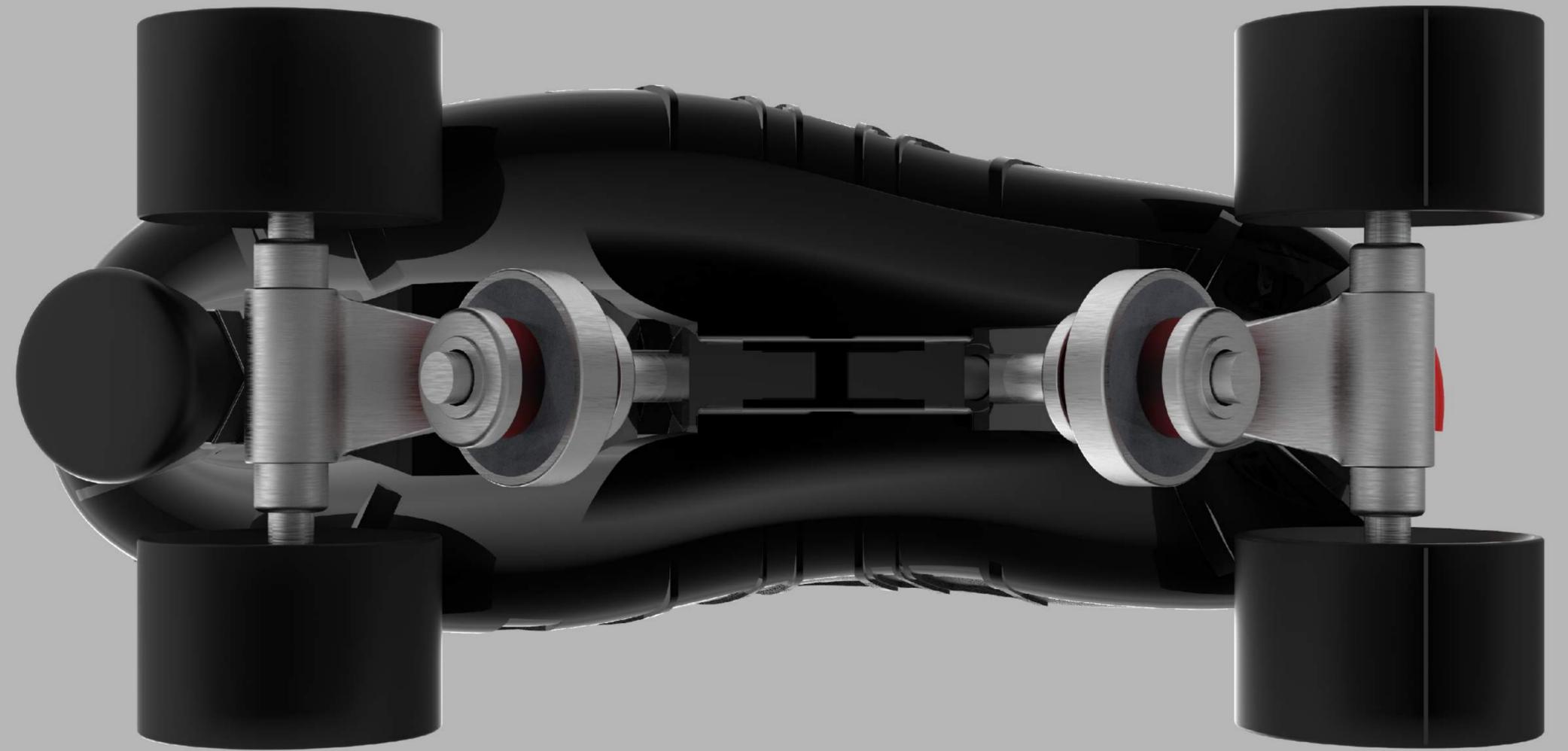


Generative Design

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

DESIGNING NEXT GEN DERBY SKATES
TRICIA SADA

THE PROCESS
FIELD RESEARCH
I visited a lot of local derby places and even tried out for their team.

INSIGHTS/PROBLEMS
Skate needs to fit like a second skin
For extra force gets wanted to maximize, reducing performance.

Plate breakage in metatarsal region
Players are complaining on their feet, meaning their skate is not leading to breakage plate.

Wear and Tear in toecap region
Front drag and being constantly on the edge leads to wear on toecap and toe cap.

Doesn't reflect derby culture & aesthetic
The design of the skate is outdated and does not reflect the raw energy and legitimacy of the sport.

PROOF
REMOVE THE WHEEL
WHEEL PROTECTION

IDEATION
BANDAGE STRAPS
SUSPENSION
ARREST SUPPORT

MOCKUPS/SOLUTIONS
Strapped & Thermoformed
Twee Structure & Generative Design FOR STRONGER PLATES

FEATURES
THE FUTURE OF DERBY SKATES IS **LIGHTER and STRONGER**
THESE ARE THE TWO MAIN FEATURES SKATERS LOOK FOR.

modern derby professional skater
New York

Problem: Outdated Skates
Research recent performance and aesthetic needs of modern-day derby.

Designed for **ROXY DALLAS**
A skater, a skater, the ultimate derby.

EXTERNAL ATTACHMENTS
Toe Cap & Heel Protection
Heel Strap

Skate wooden videos identified how far heel slips out of shoe, revealing ill-fitted skates.

Skate parts on table: wheels, trucks, plates, and straps.

other projects

Other Work

See more projects at triciasada.com

experience

