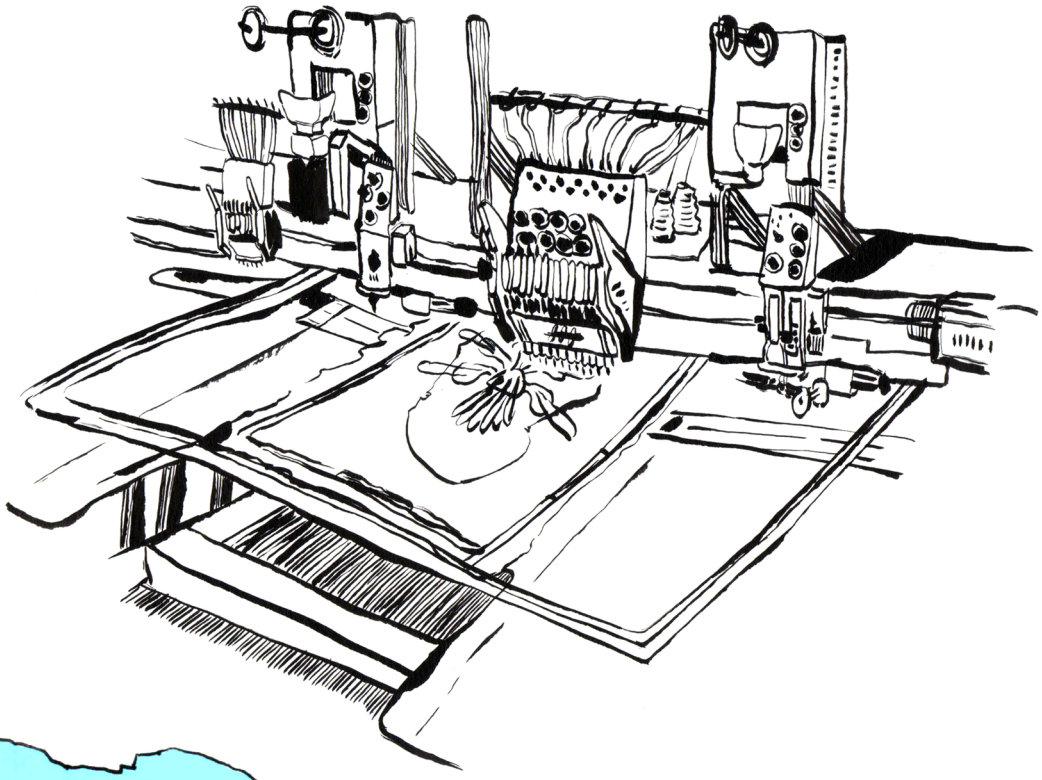


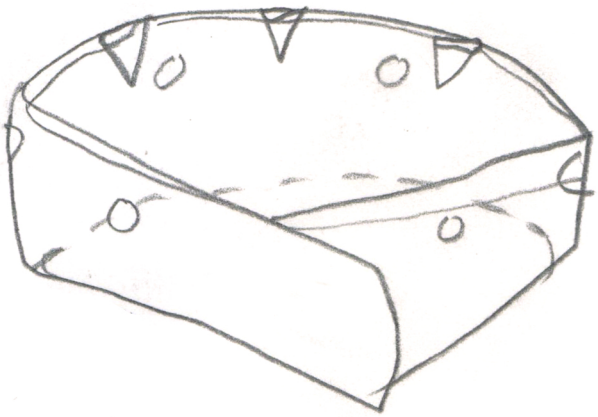
Diabolo Bob Suit Core

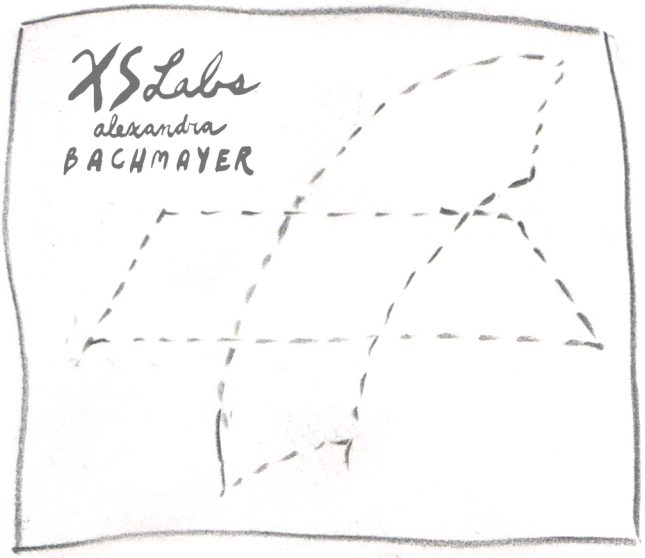
alexandra
BACHMAYER

PRE-MOCK PROTOTYPE SKETCHES *all cut on a bias*

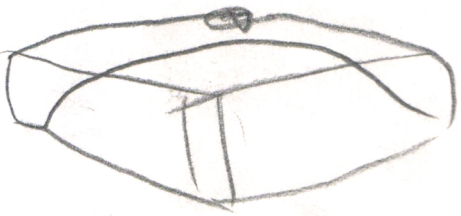
ONE WITH DARTS :

USE BIG PIECES of VELCRO

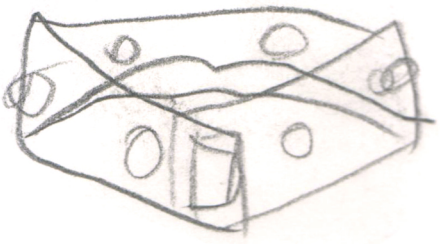


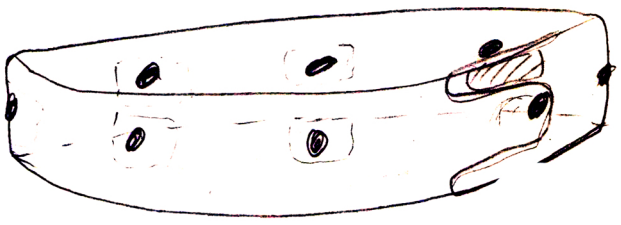


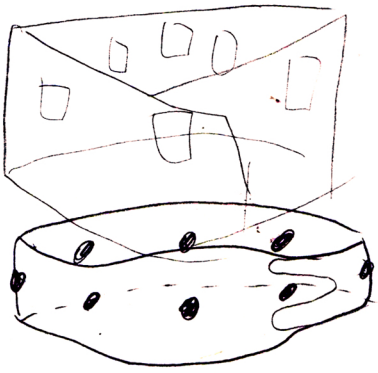
ONE THAT HAS SOME CURVE cut into it (NOT JUST STRAIGHT LINES)

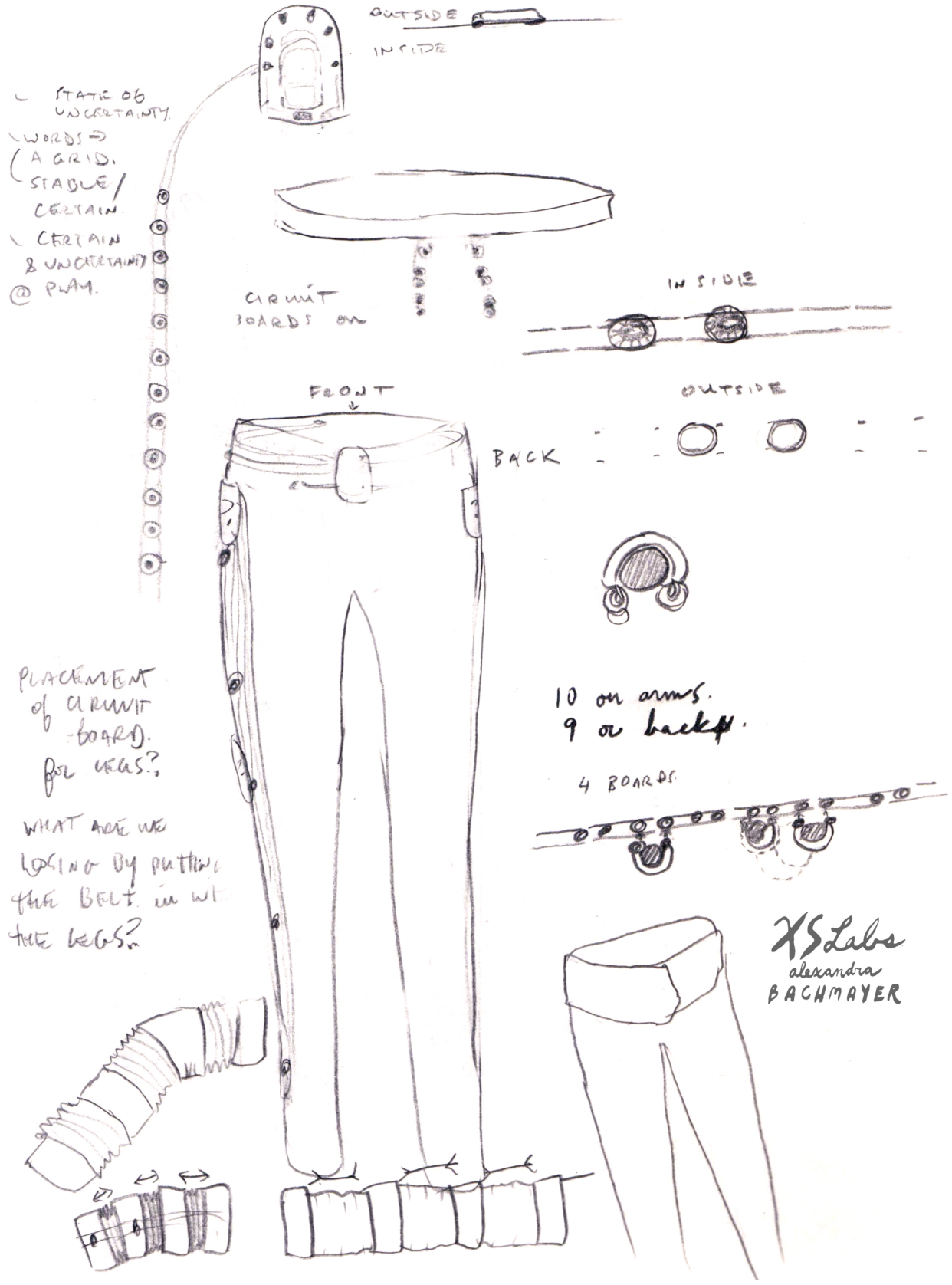


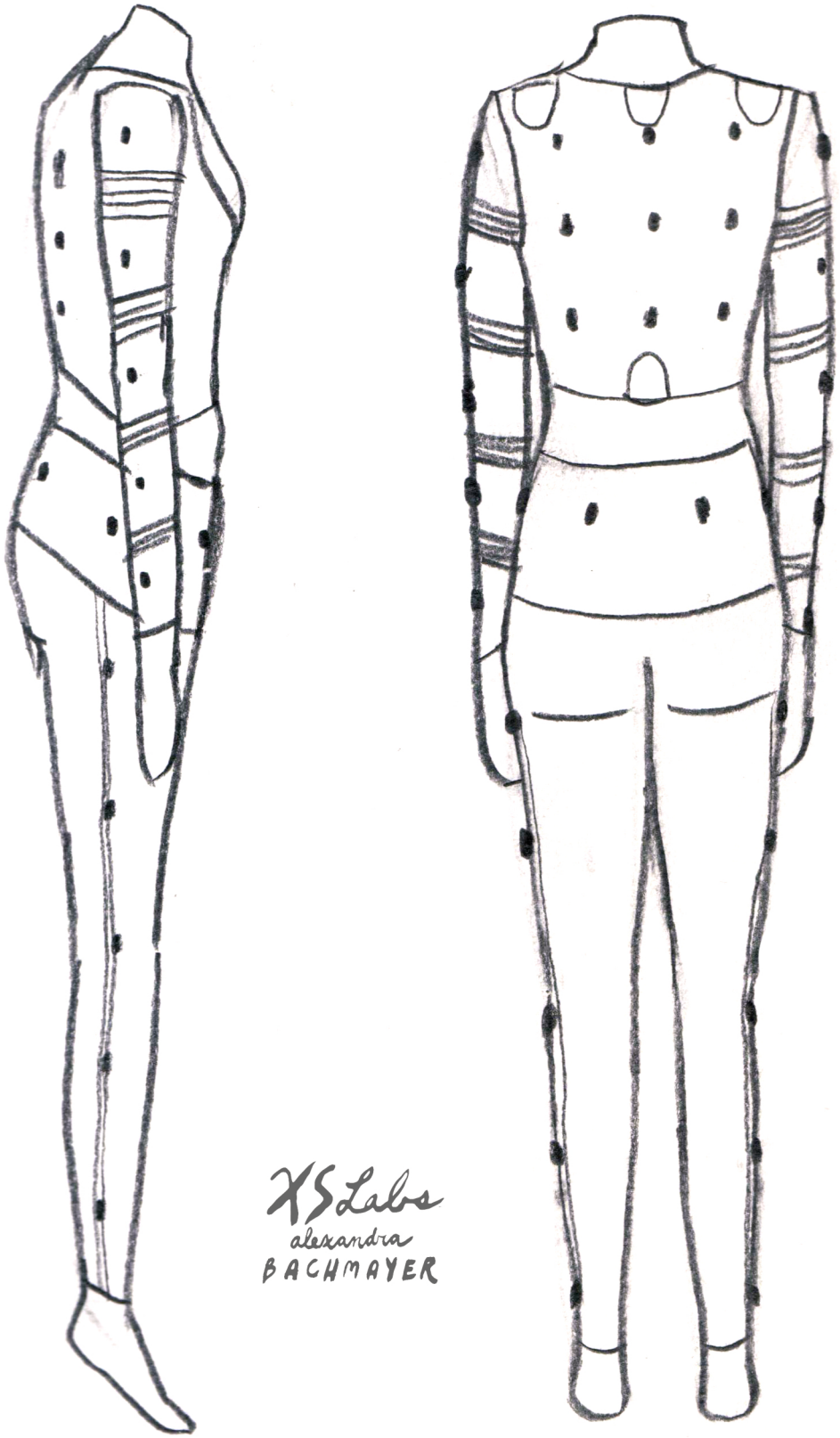
ONE THAT LEAVES ROOM for THE BUN (PERHAPS SHOW WHERE THERE COULD BE MESH?)
└ for BREATHABILITY.

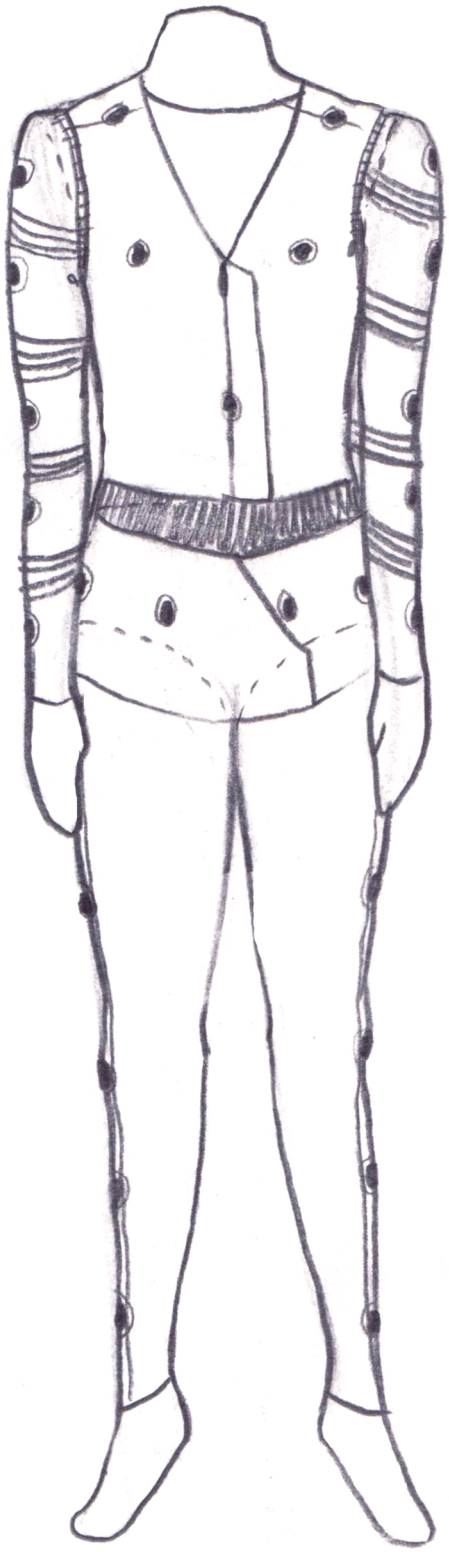


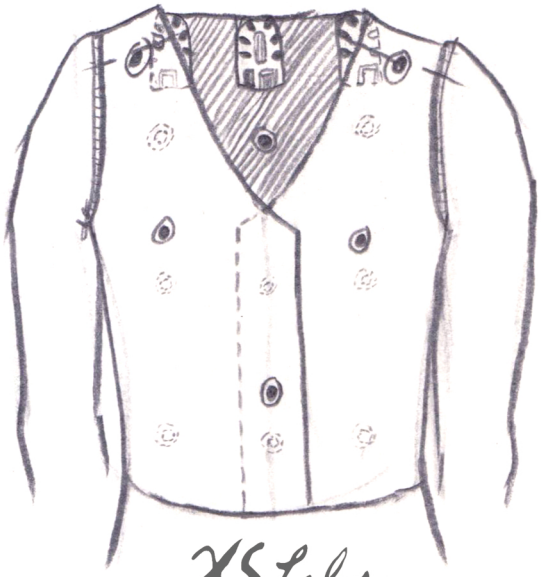




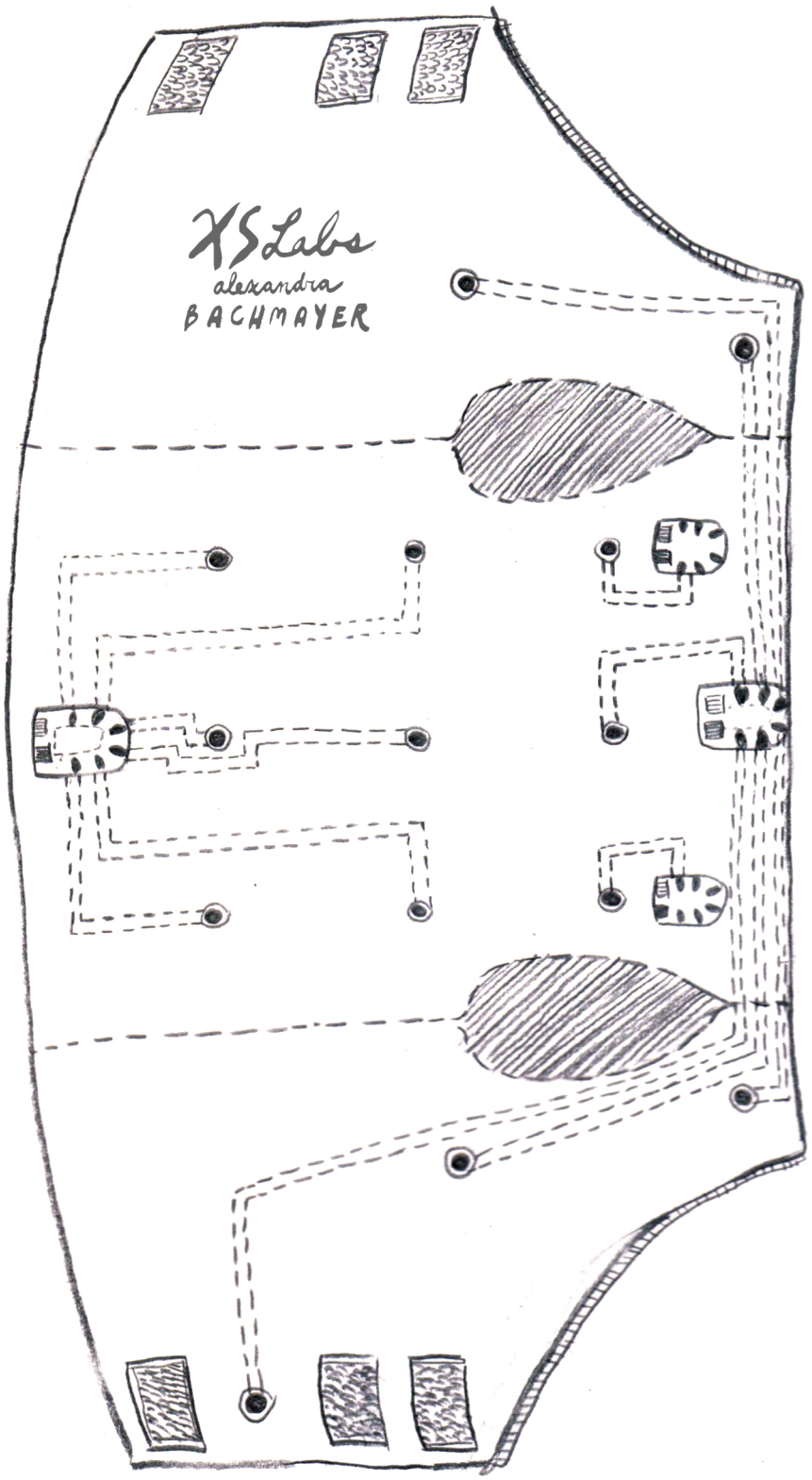

OUTSIDE
INSIDE
STATE OF UNCERTAINTY
WORDS ⇒ A GRID. STABLE/ CERTAIN.
CERTAIN & UNCERTAINTY @ PLAY.
CIRCUIT BOARDS on
INSIDE
FRONT
OUTSIDE
BACK
PLACEMENT of CIRCUIT BOARD. for LEGS?
WHAT ARE WE LOSING BY PUTTING THE BELT in w/ THE LEGS?
10 on arms.
9 on back.
4 BOARDS
XS Labs
alexandra
BACHMAYER


XS Labs
alexandra
BACHMAYER

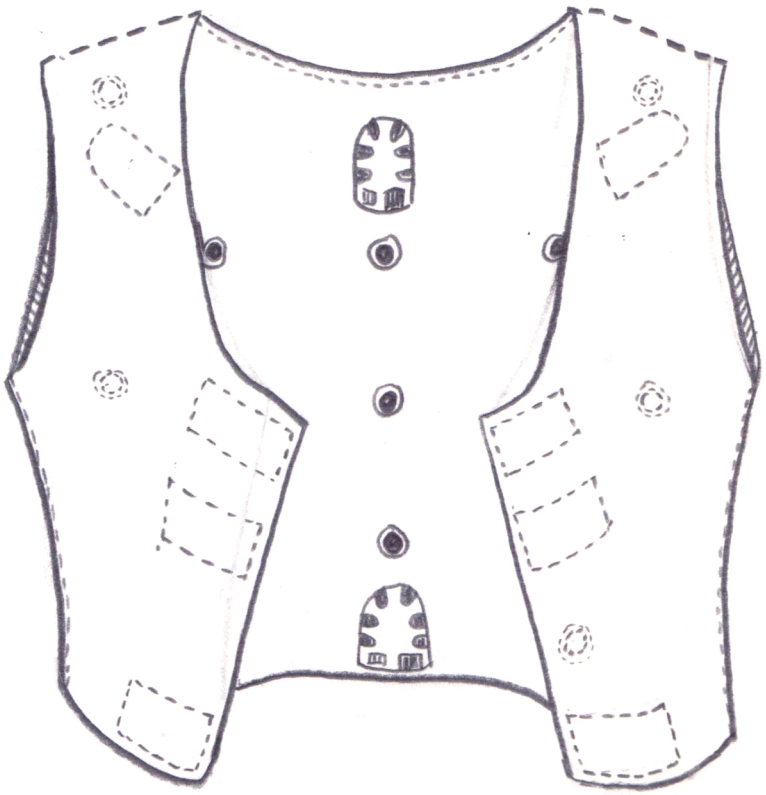


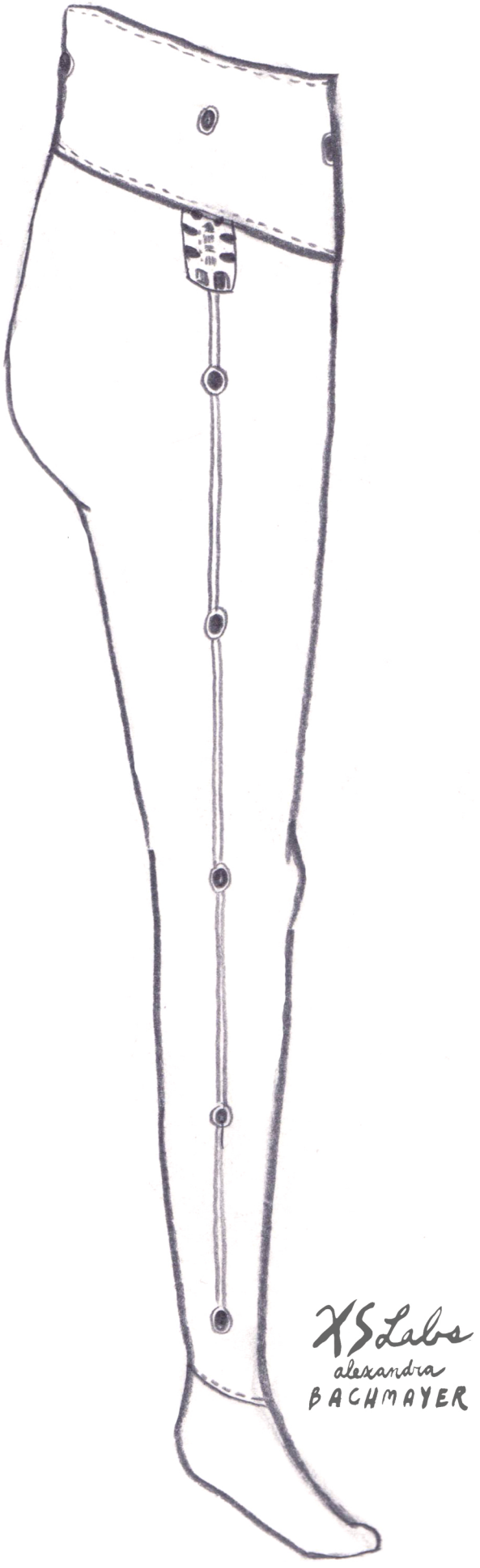


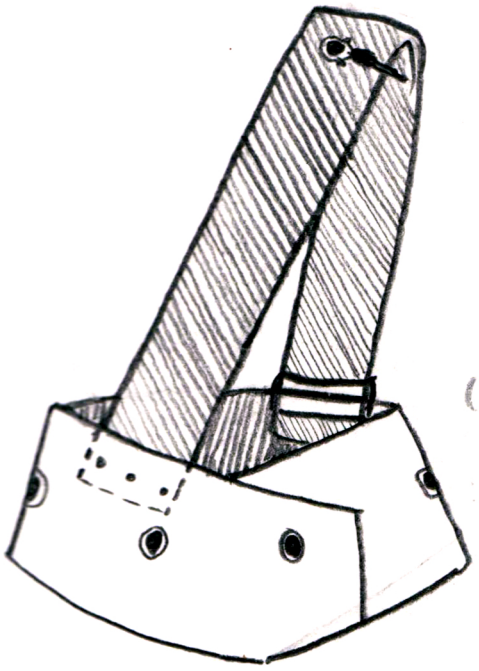
XS Labs
alexandra
BACHMAYER

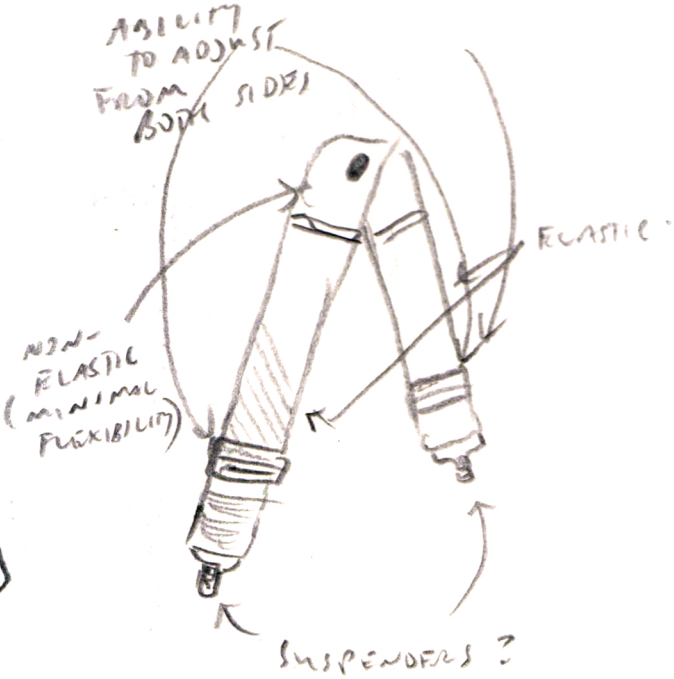

XS Labs
alexandra
BACHMAYER

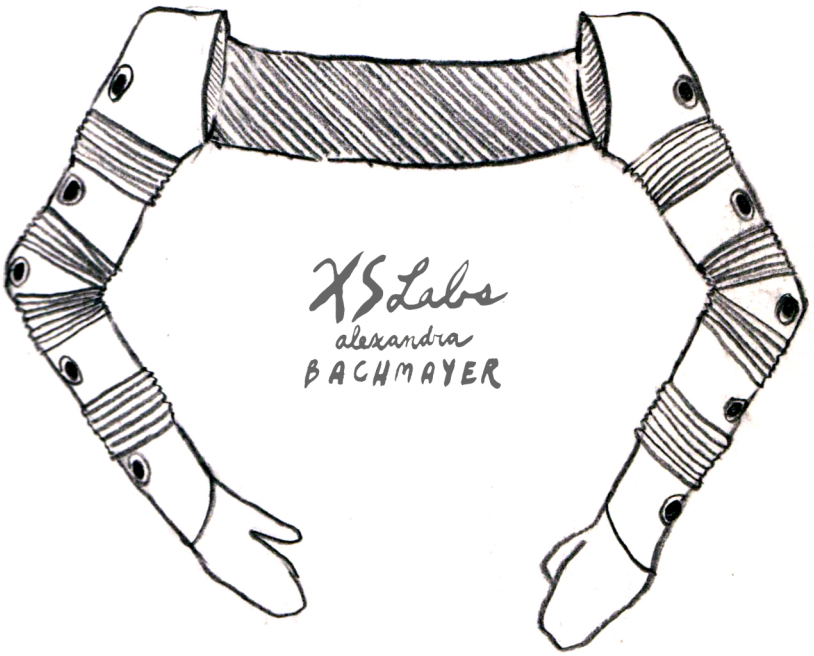

XS Labs
alexandra
BACHMAYER

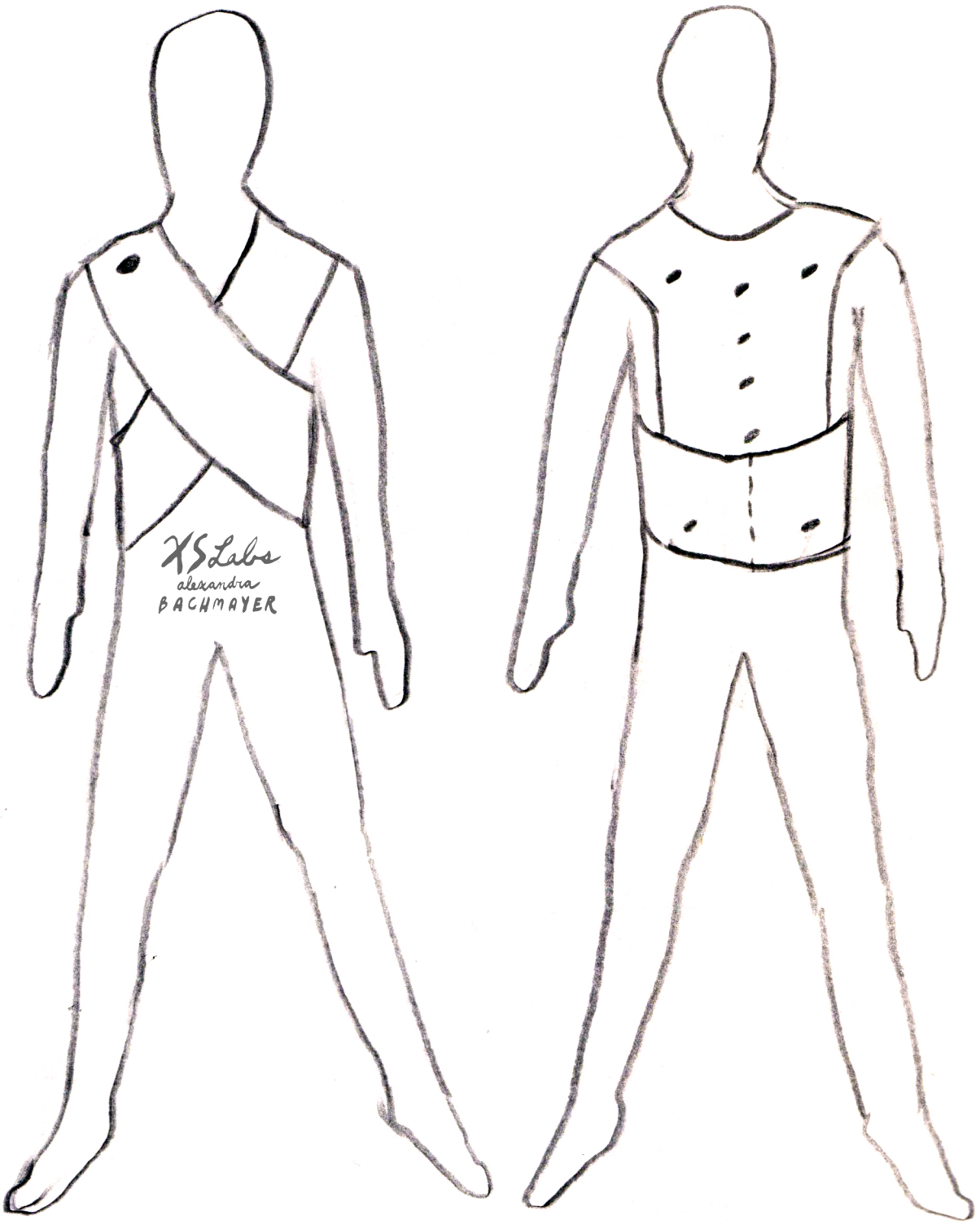



XS Labs
alexandra
BACHMAYER



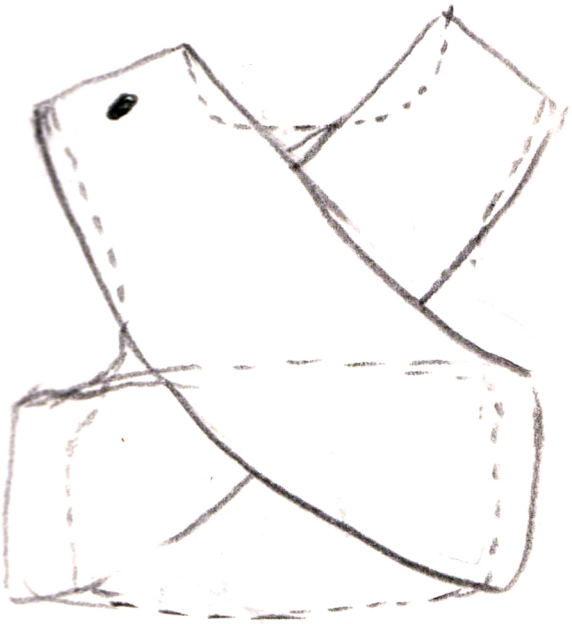

ABILITY TO ADJUST FROM BOTH SIDES
ELASTIC
NON-ELASTIC (MINIMAL FLEXIBILITY)
SUSPENDERS ?

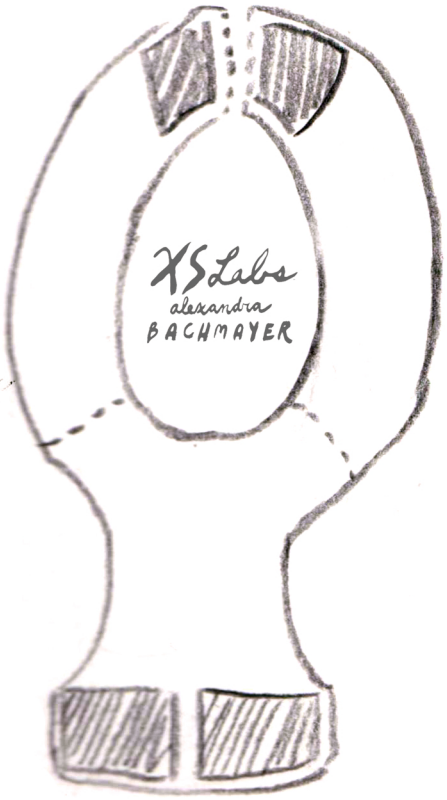

XS Labs
alexandra
BACHMAYER



CUTANEOUS MECHANORECEPTORS
- RUFFINI'S END ORGAN - SUSTAINED PRESSURE
- MEISSNERS CORPUSCLE - As in TEXTURE OR SLOW VIBRATIONS

- THERMORECEPTORS
- NOCICEPTORS.




XS Labs
alexandria
BACHMAYER



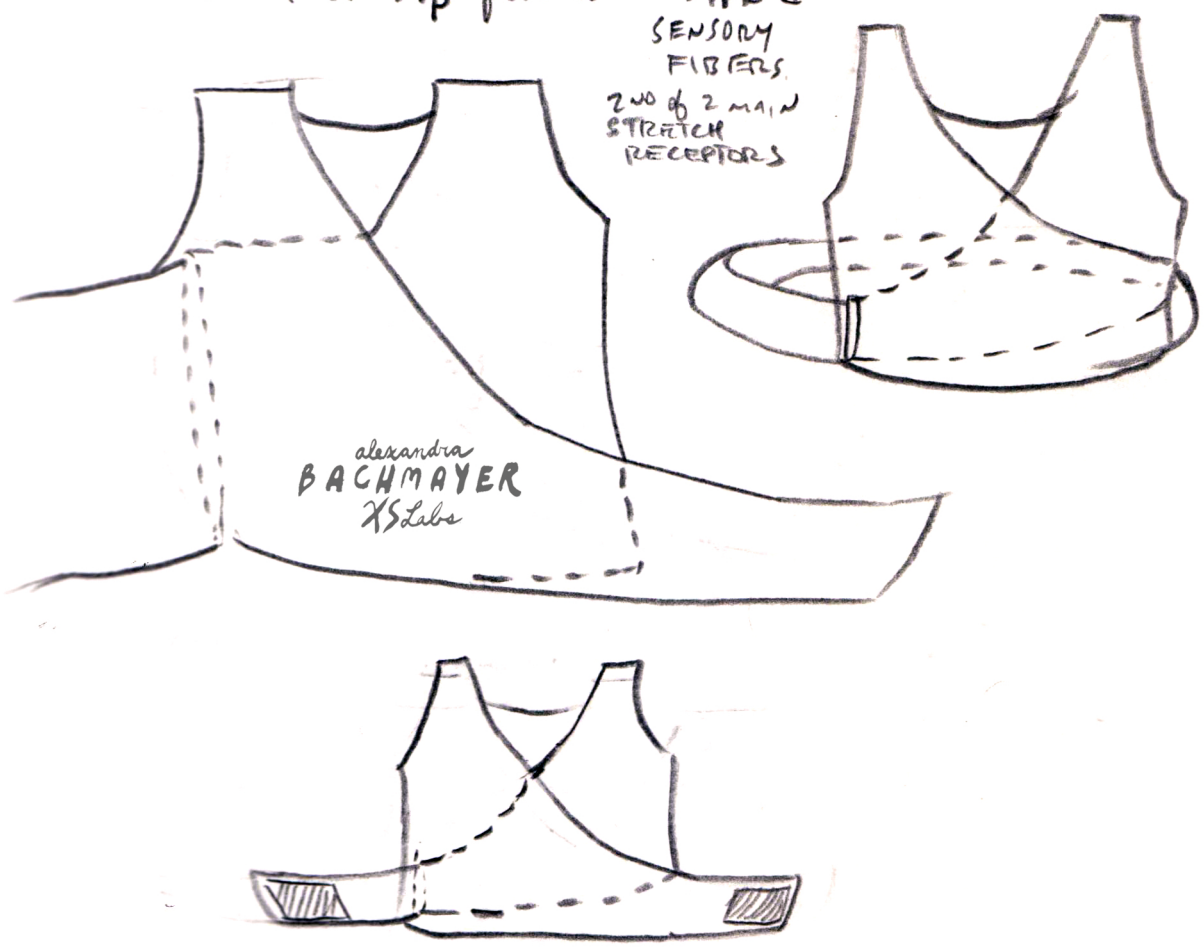
200 Hz - 300 Hz
or 250 Hz - 350 Hz.

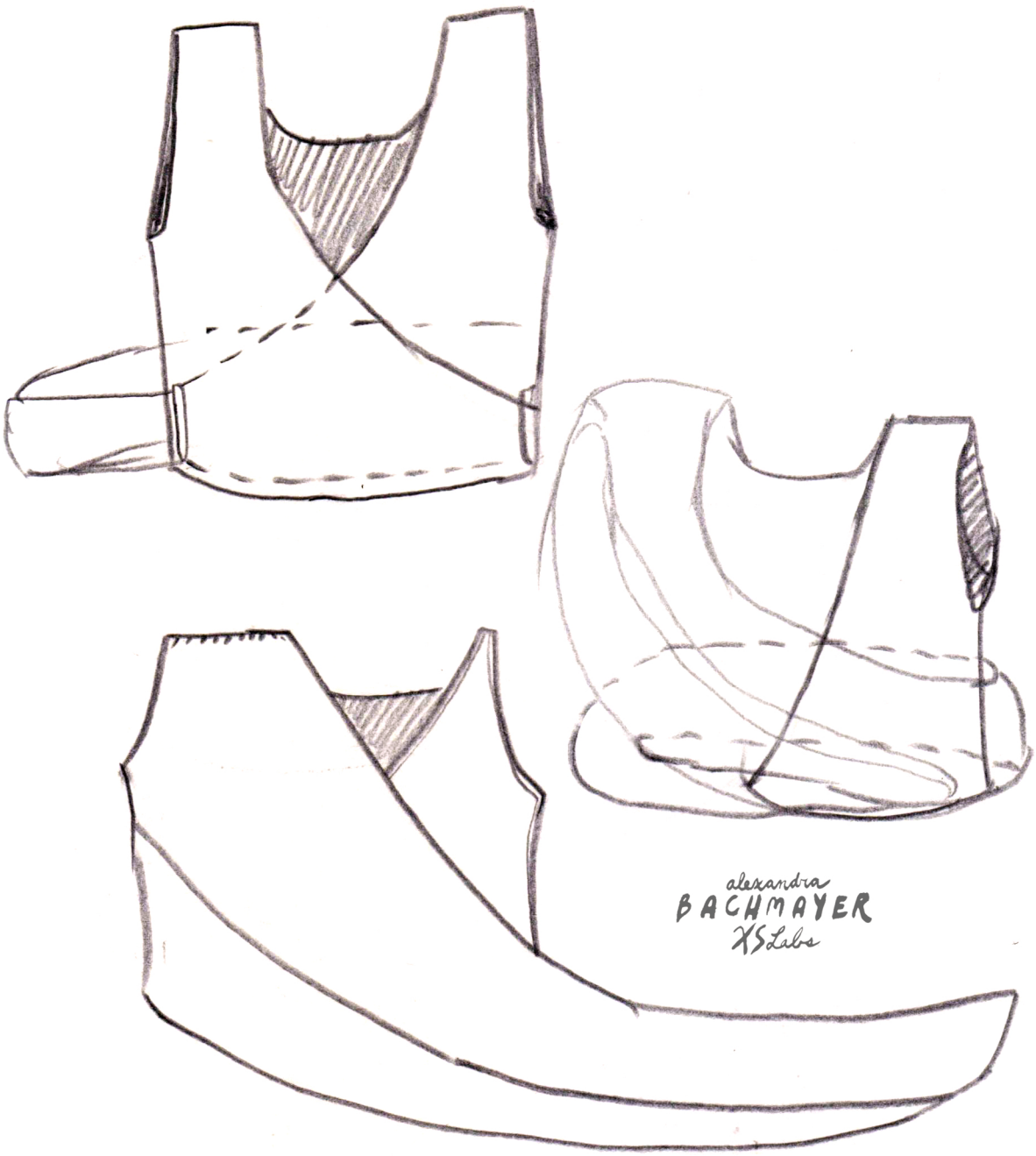
ADAPT MORE RAPIDLY THAN MEISSNER'S CORPUSCLES
- & LOWER RESPONSE THRESHOLD
DETECT
- VIBRATIONS TO THE SKELETON.

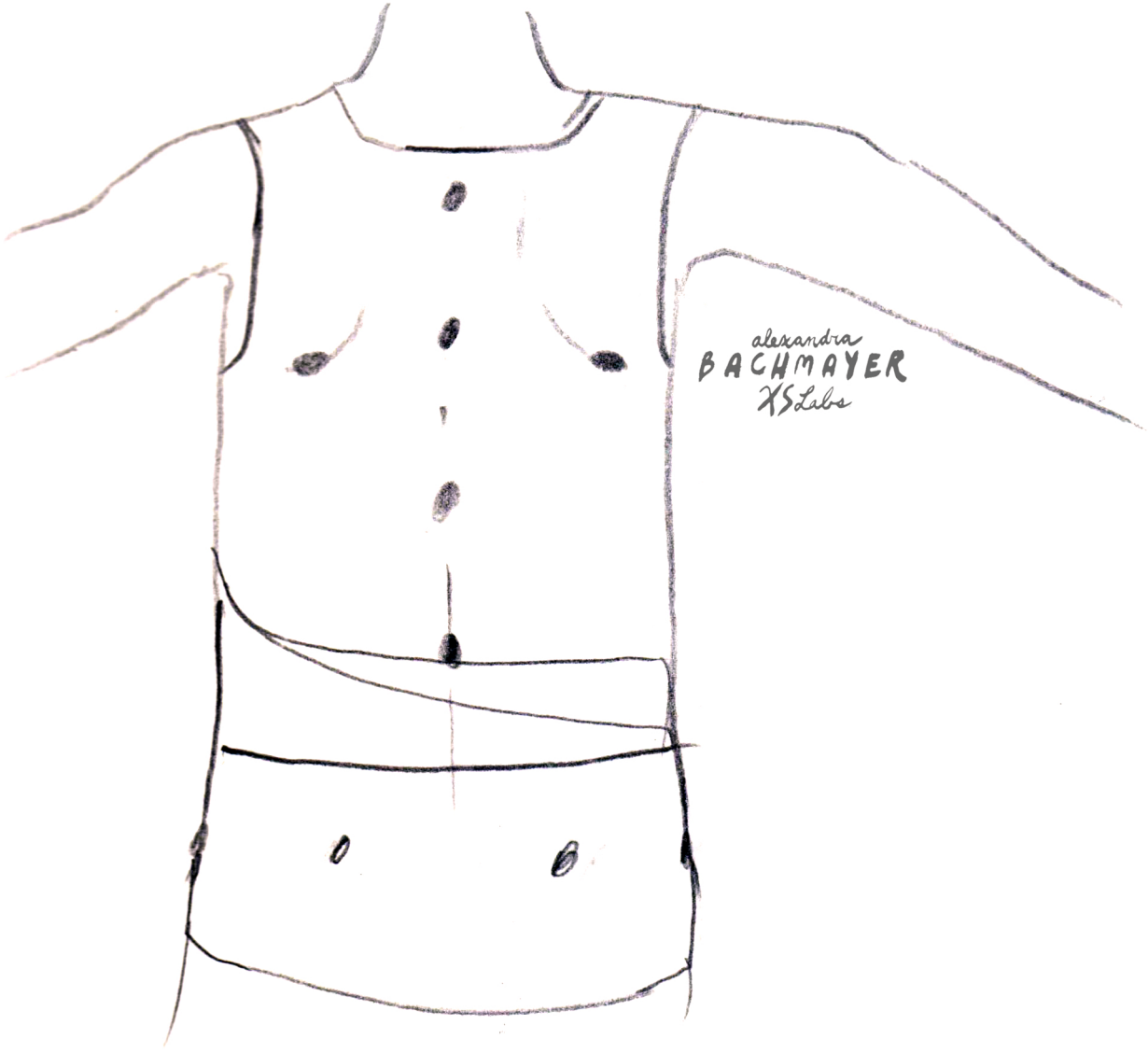
"STRUCTURALLY SIMILAR ENDINGS IN BILLS of DUCKS & GEESE and IN THE LEGS of CRANES & HERONS DETECT VIBRATIONS IN WATER."

- "INFO ABOUT DYNAMIC QUALITIES of MECHANICAL STIMULI"

- FIBER TYPES: Aβ fibers. - TYPE II SENSORY FIBERS
2ND of 2 MAIN STRETCH RECEPTORS

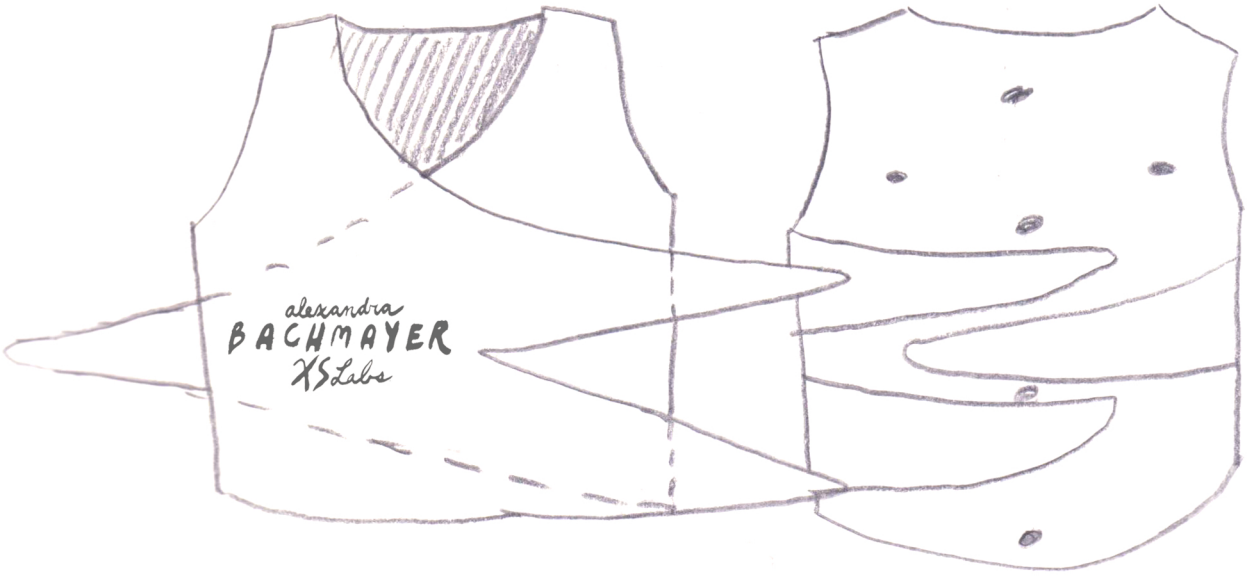



alexandra
BACHMAYER
XS Labs

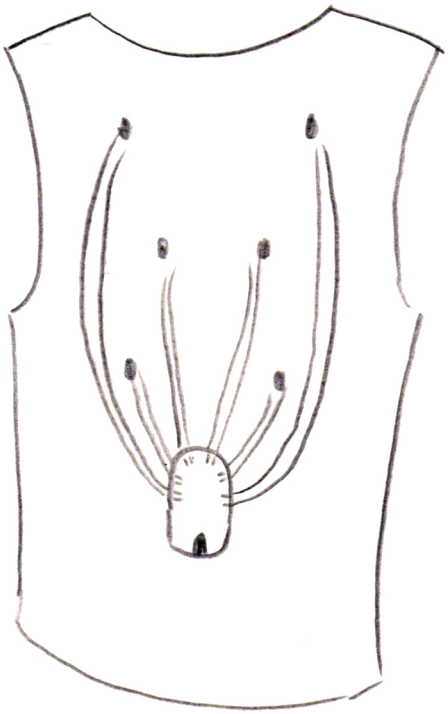

alexandra
BACHMAYER
XS Labs



- GO BACK AND LOOK AT "THE EYES OF THE SKIN"
- SOUND WAVES AS VIBRATIONS & HAPTIC VIBRATIONS.
- IT ALL STARTS WITH TOUCH.
- TACTILE COMMUNICATION OF SKIN.

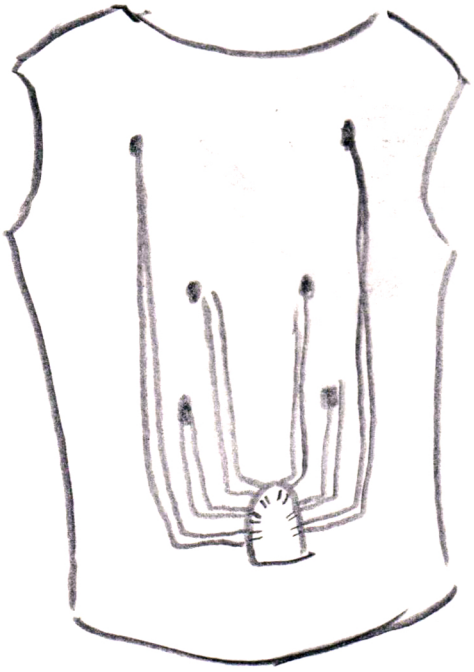


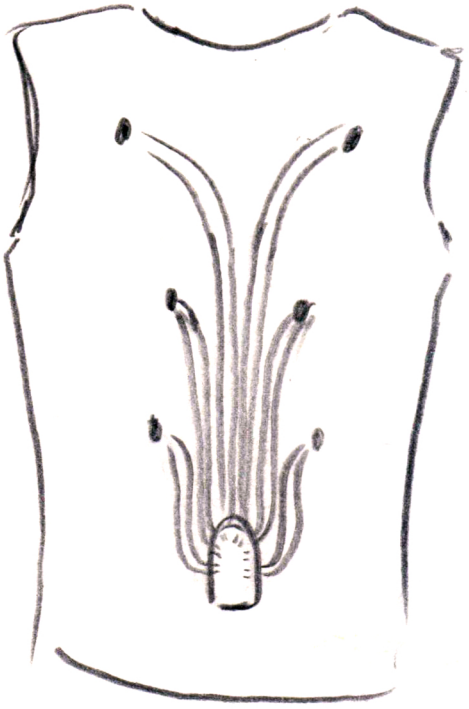
- POSITIONING ACTUATORS ON BELT



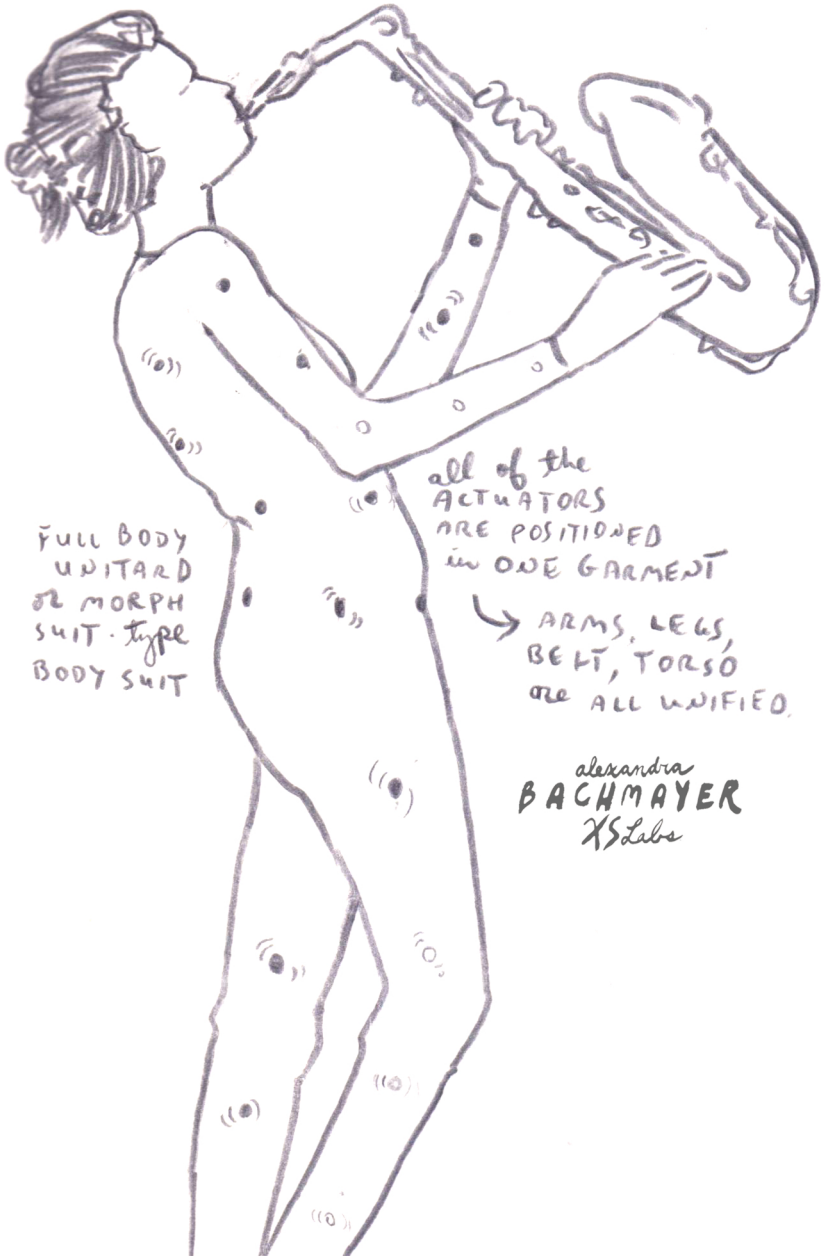
QUESTIONS

- INSULATION
- DECORATIVE
- COMFORT
- CORROSION OVER TIME
  - WILL INCREASE RESISTANCE
- STITCHES ON INSIDE VS OUTSIDE
- CIRCUIT BOARD LOCATION
  - OUTSIDE VS INSIDE

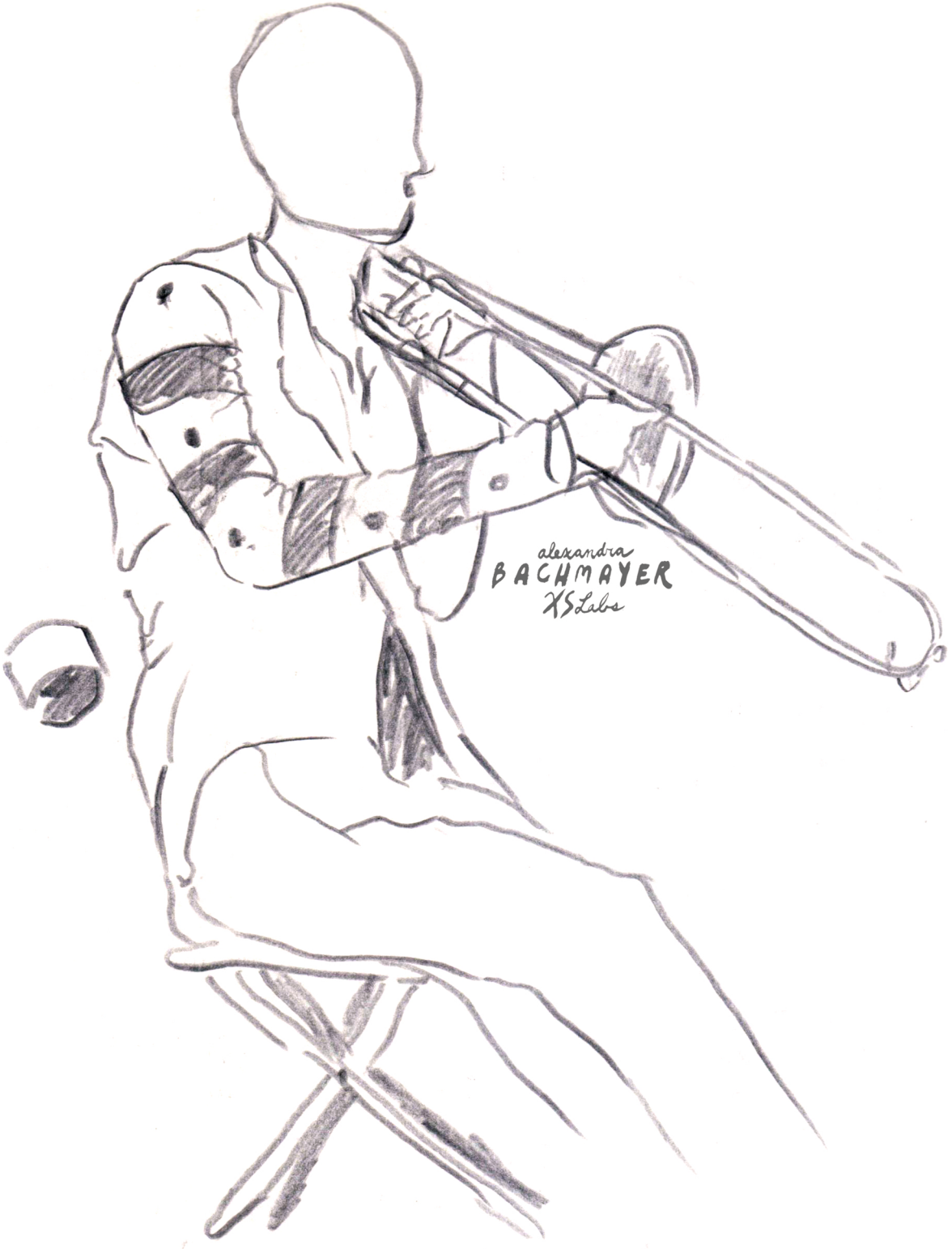




alexandra
BACHMAYER
XS Labs

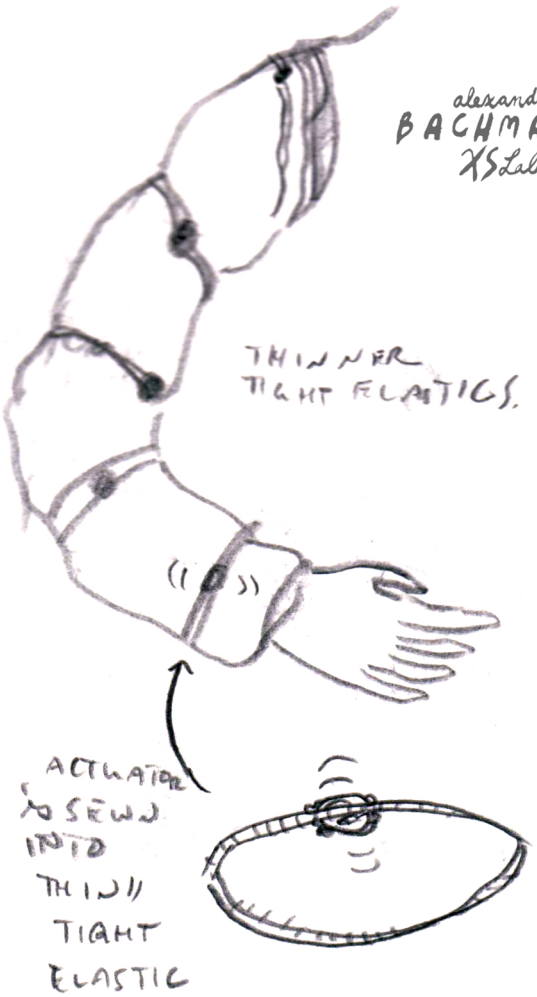

FULL BODY
UNITARD
OR MORPH
SUIT · type
BODY SUIT
all of the
ACTUATORS
ARE POSITIONED
in ONE GARMENT
ARMS, LEGS,
BELT, TORSO
are ALL UNIFIED.
alexandra
BACHMAYER
XSLabs


alexandra
BACHMAYER
XSLabs

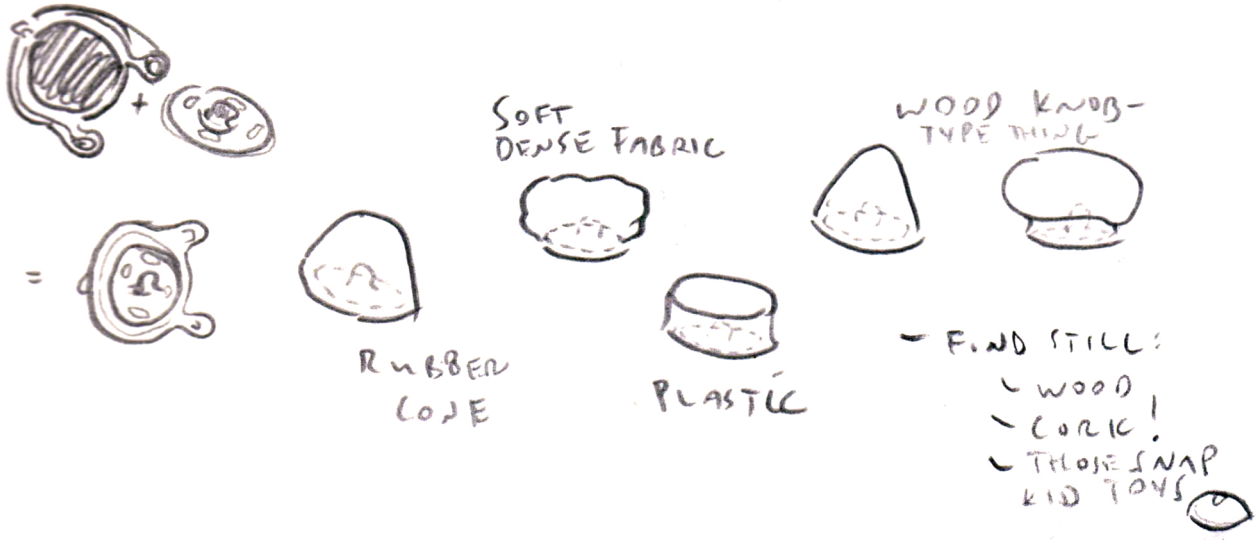

alexandra
BACHMAYER
XSLabs

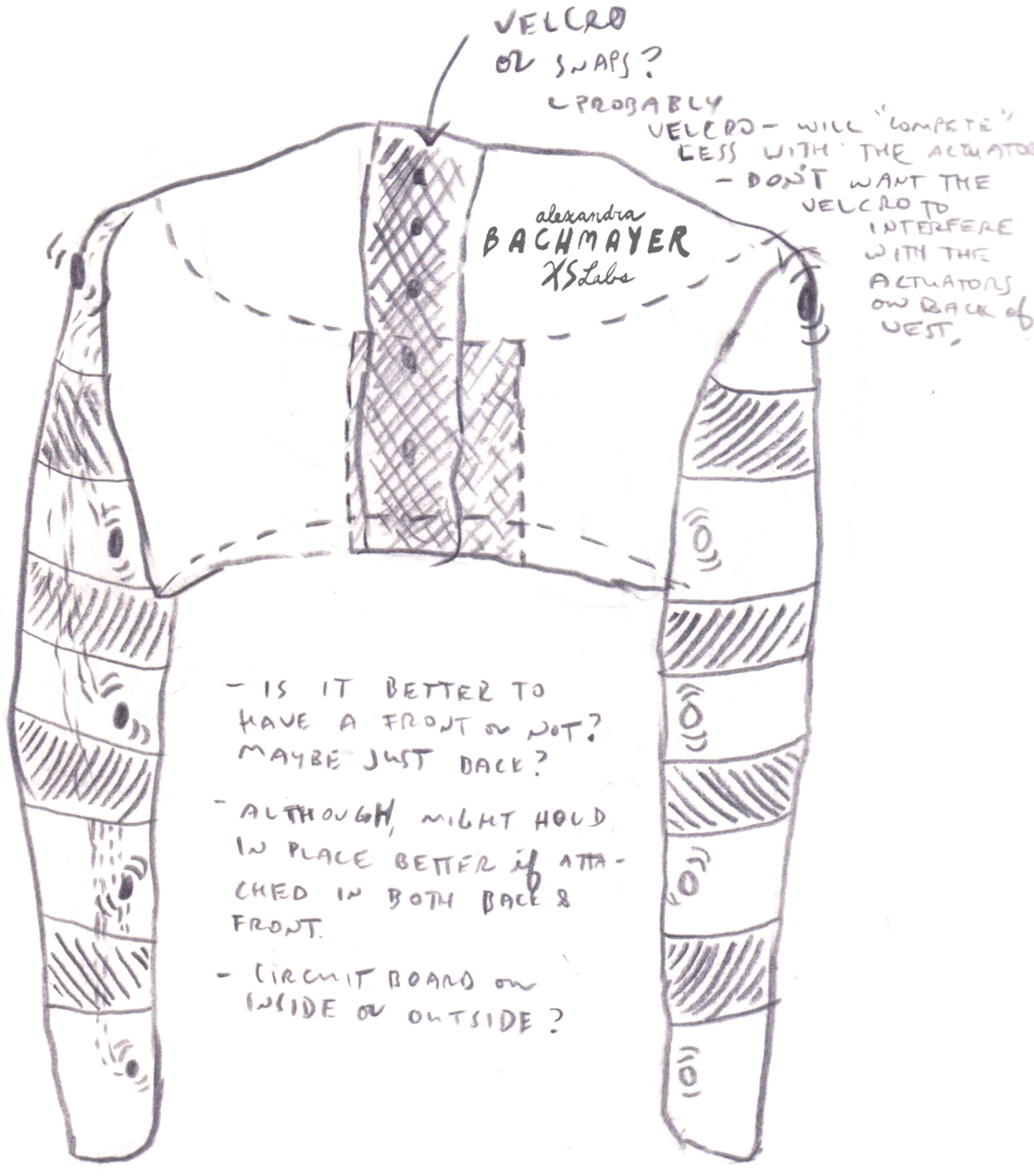
alexandra
BACHMAYER
XS Labs

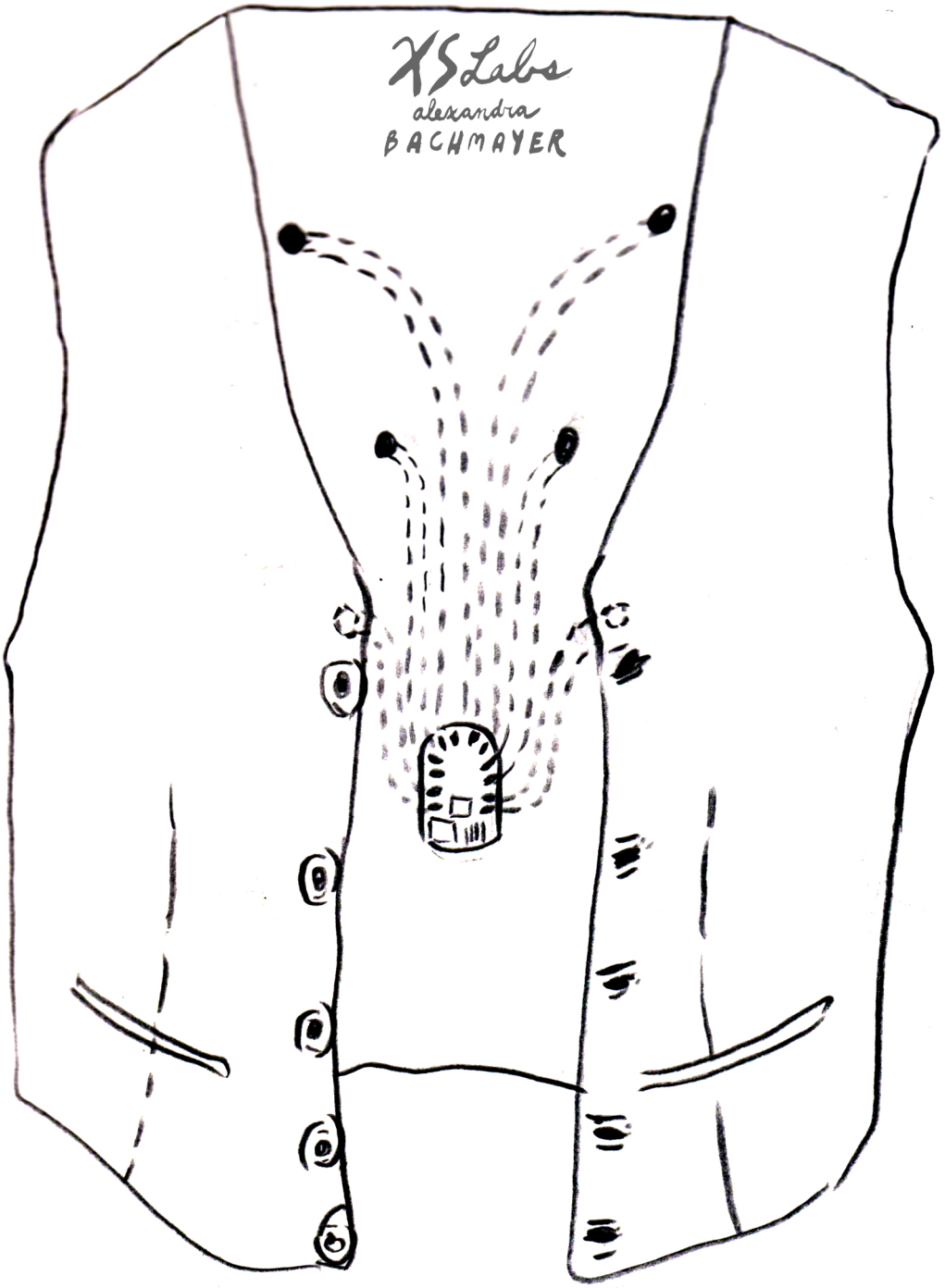


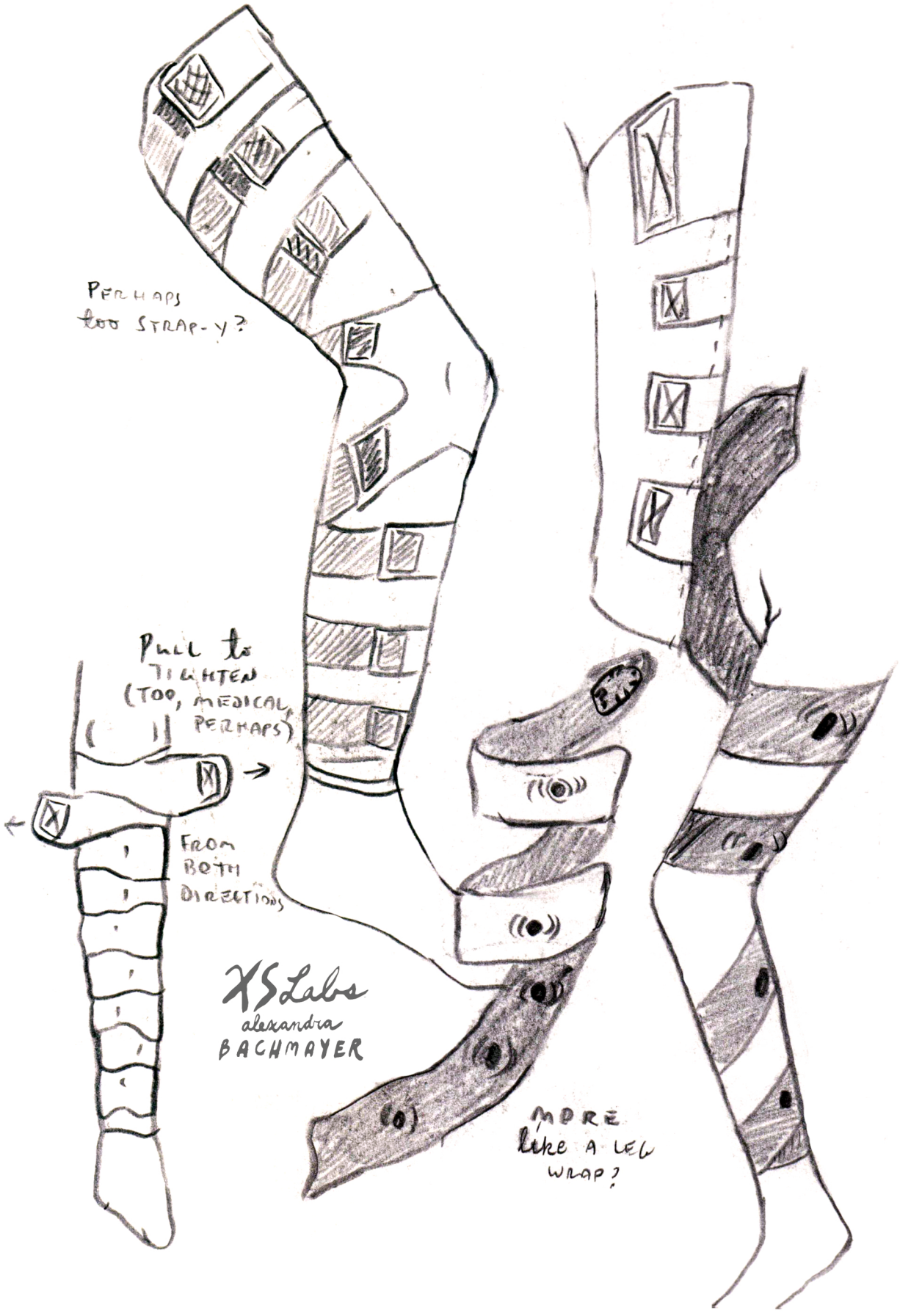


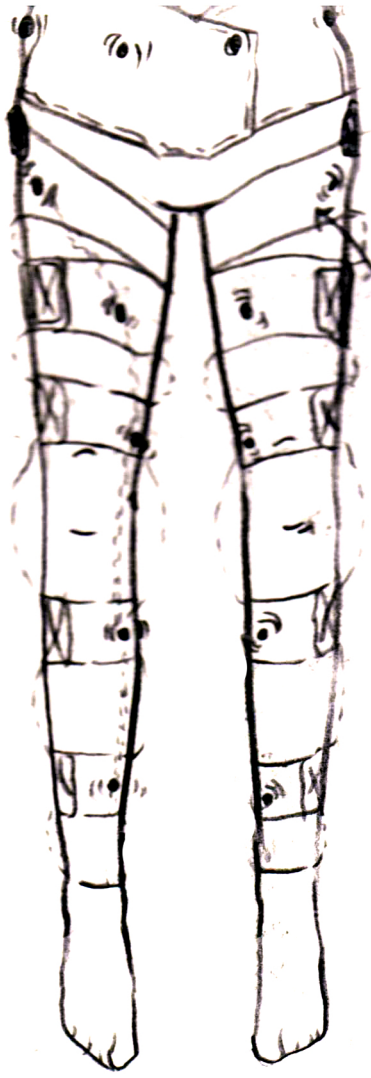
TESTING MATERIALS to HELP WITH VIBRATIONS




VELCRO OR SNAPS?
- PROBABLY VELCRO - WILL "COMPETE" LESS WITH THE ACTUATORS
- DON'T WANT THE VELCRO TO INTERFERE WITH THE ACTUATORS ON BACK OF VEST.
alexandra BACHMAYER XSLabs
- IS IT BETTER TO HAVE A FRONT OR NOT? MAYBE JUST BACK?
- ALTHOUGH, MIGHT HOLD IN PLACE BETTER IF ATTACHED IN BOTH BACK & FRONT.
- CIRCUIT BOARD ON INSIDE OR OUTSIDE?


XS Labs
alexandra
BACHMAYER


PERHAPS
too STRAP-y?
Pull to
TIGHTEN
(TOO, MEDICAL,
PERHAPS)
FROM
BOTH
DIRECTIONS
XS Labs
alexandra
BACHMAYER
MORE
like A LEG
WRAP?



CIRCUIT BOARD ON OUTSIDE?

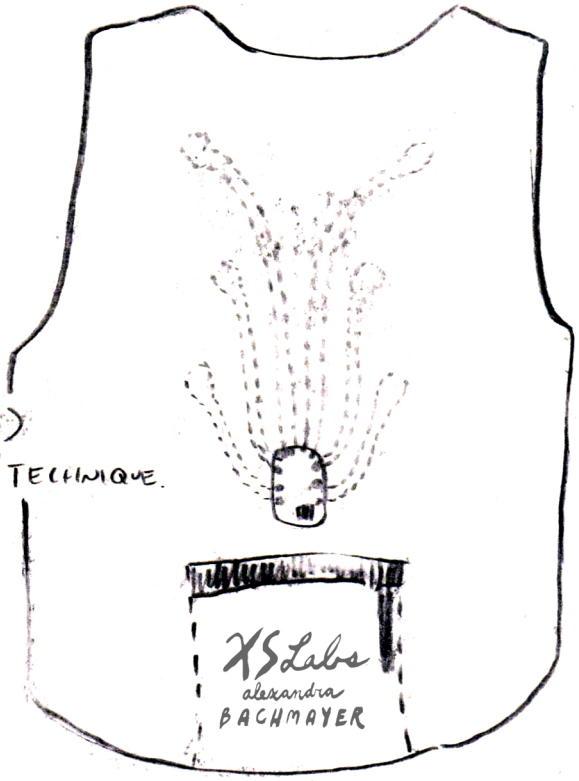
IS THERE ANYWAY TO DO THIS WITHOUT STRAPS?

TOO MUCH TO MOVE IT TO THE OUT SIDE
↳ STRAPS WILL BE TOO CONFUSING

SHOULD ACTUALLY HAVE 3 ACTUATORS BELOW THE KNEE

PROJECT NEEDS MORE of A VISUAL IDENTITY, ~~to~~ PAIR WITH THE FUNCTIONALITY

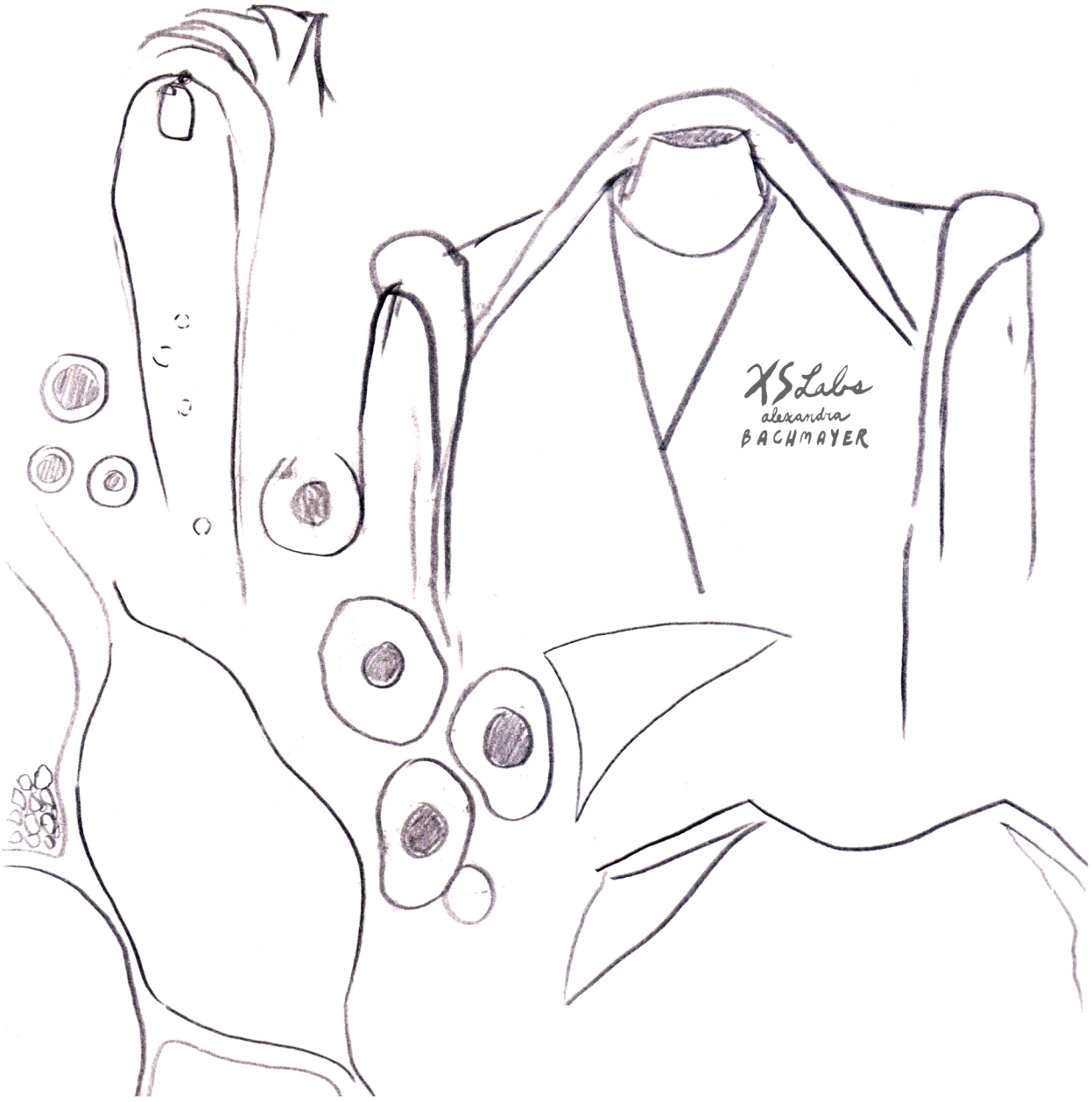
- BUNKA-STYLE SLOPER (BLOCK)
" CLOSE, CUT and OPEN OUT" TECHNIQUE.

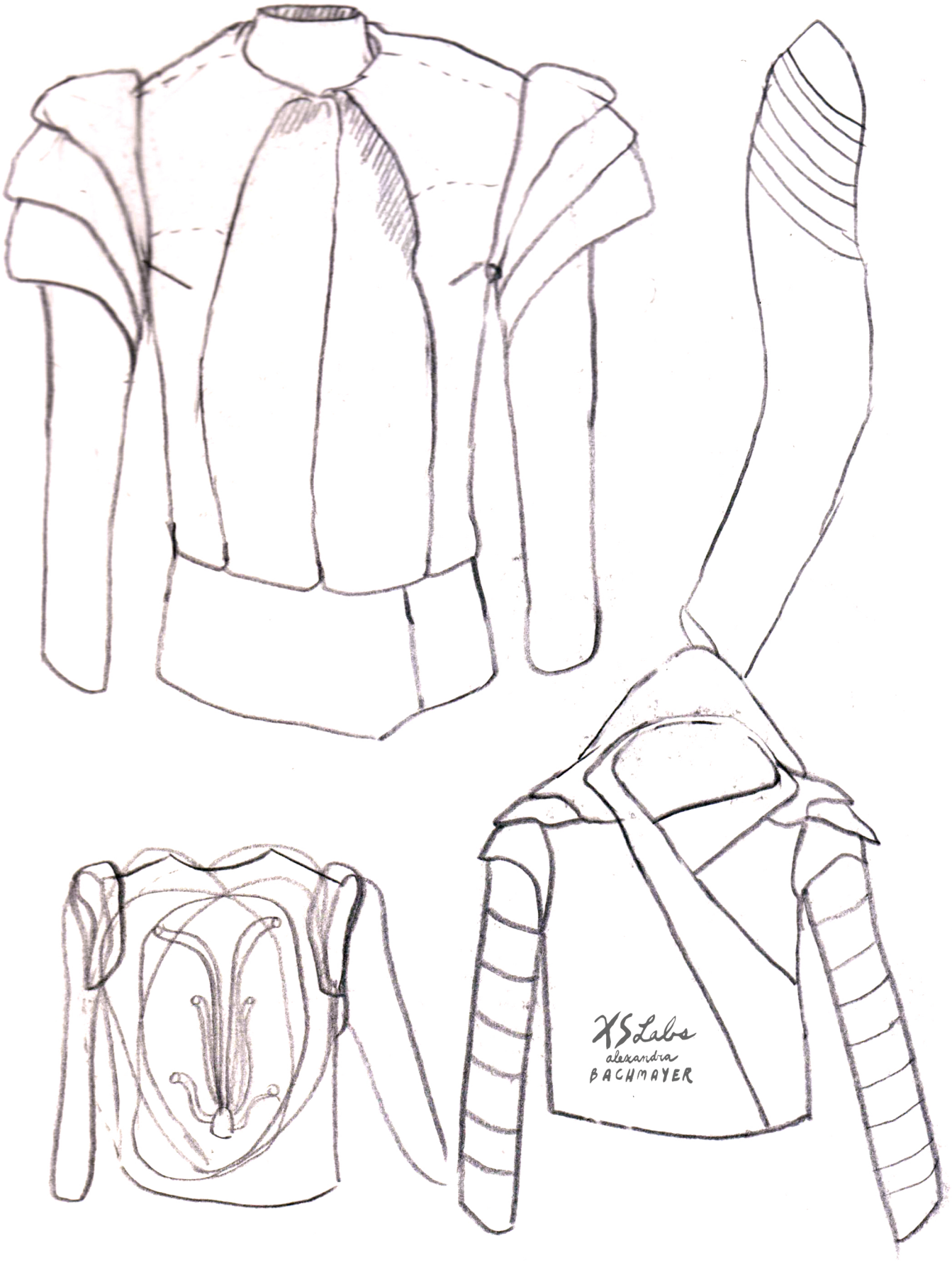




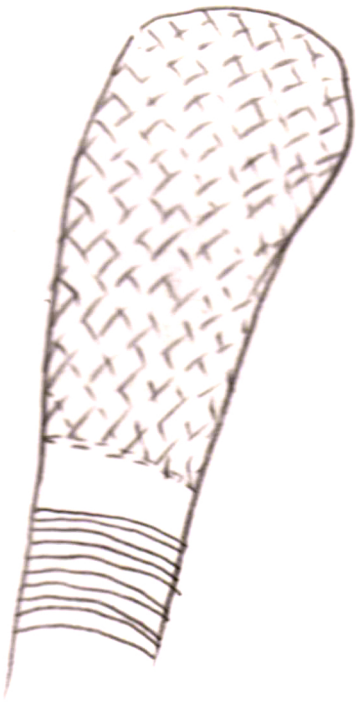


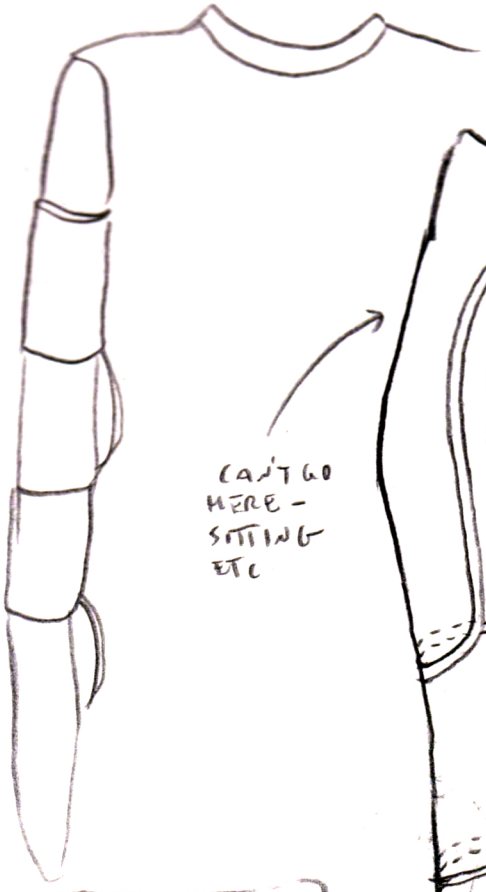
VISUAL IDENTITY.
MYSTICAL IDENTITY
└ TOTIPOTENCY
└ "ANYTHING IS POSSIBLE WITHIN LIMITS, WITHIN RESTRICTIONS"
└ BECAUSE SIMULTANEOUSLY "ANYTHING IS POSSIBLE BUT ANYTHING WITHIN LIMITS,"
↳ THE CREATIVE POTENTIAL IS EXPANSIVE & EXPANDING

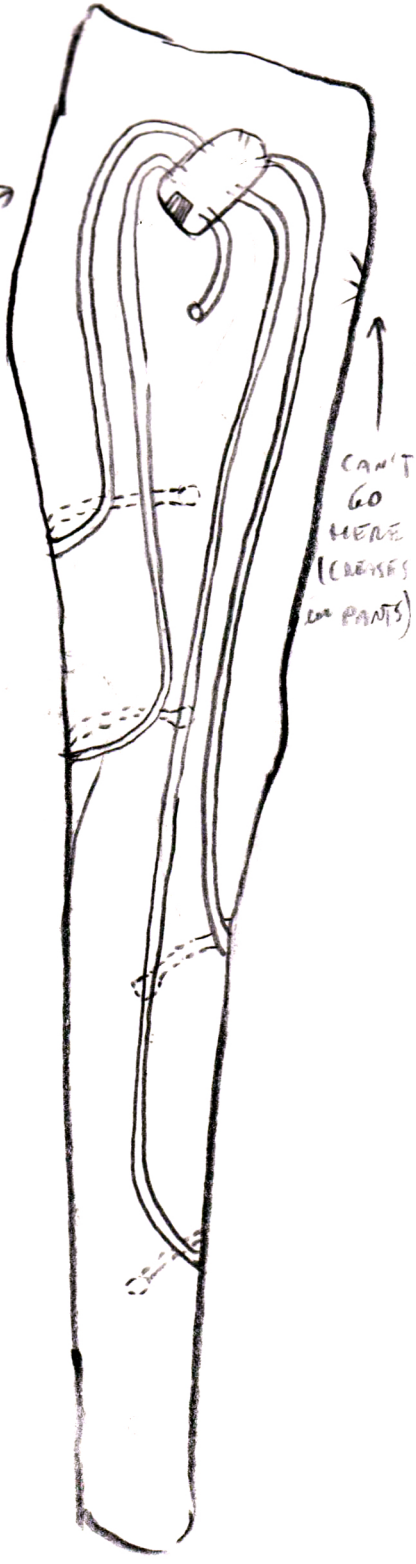



XS Labs
alexandra
BACHMAYER


XS Labs
alexandra
BACHMAYER

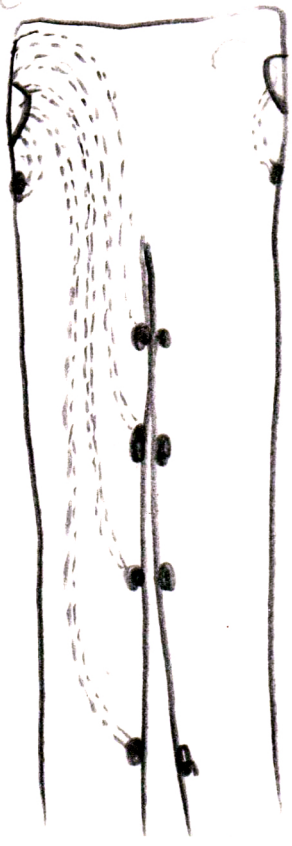




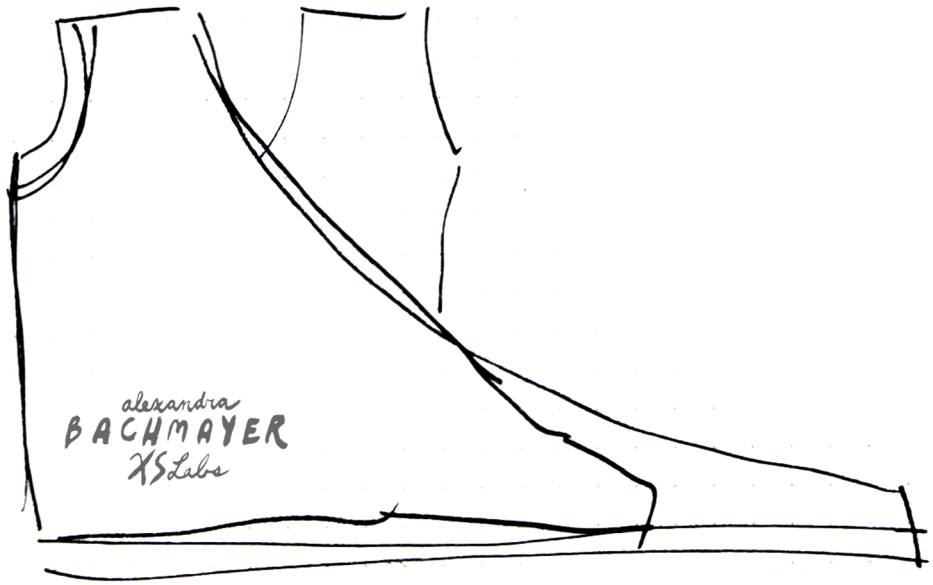


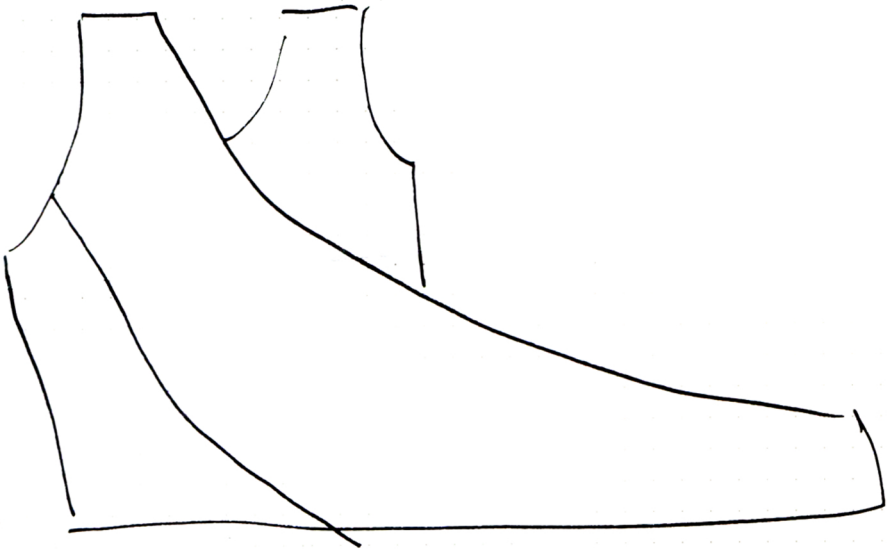


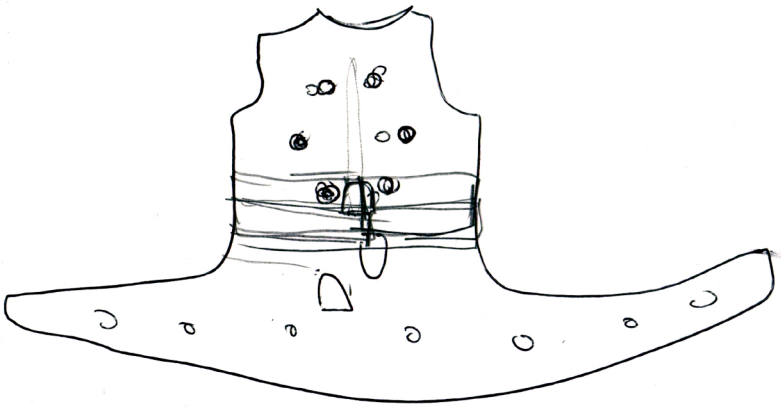
XS Labs
alexandra
BACHMAYER

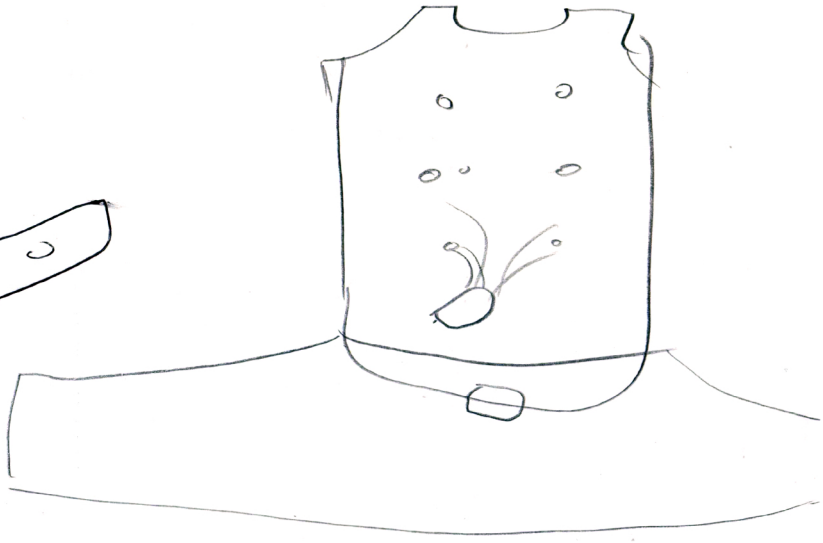


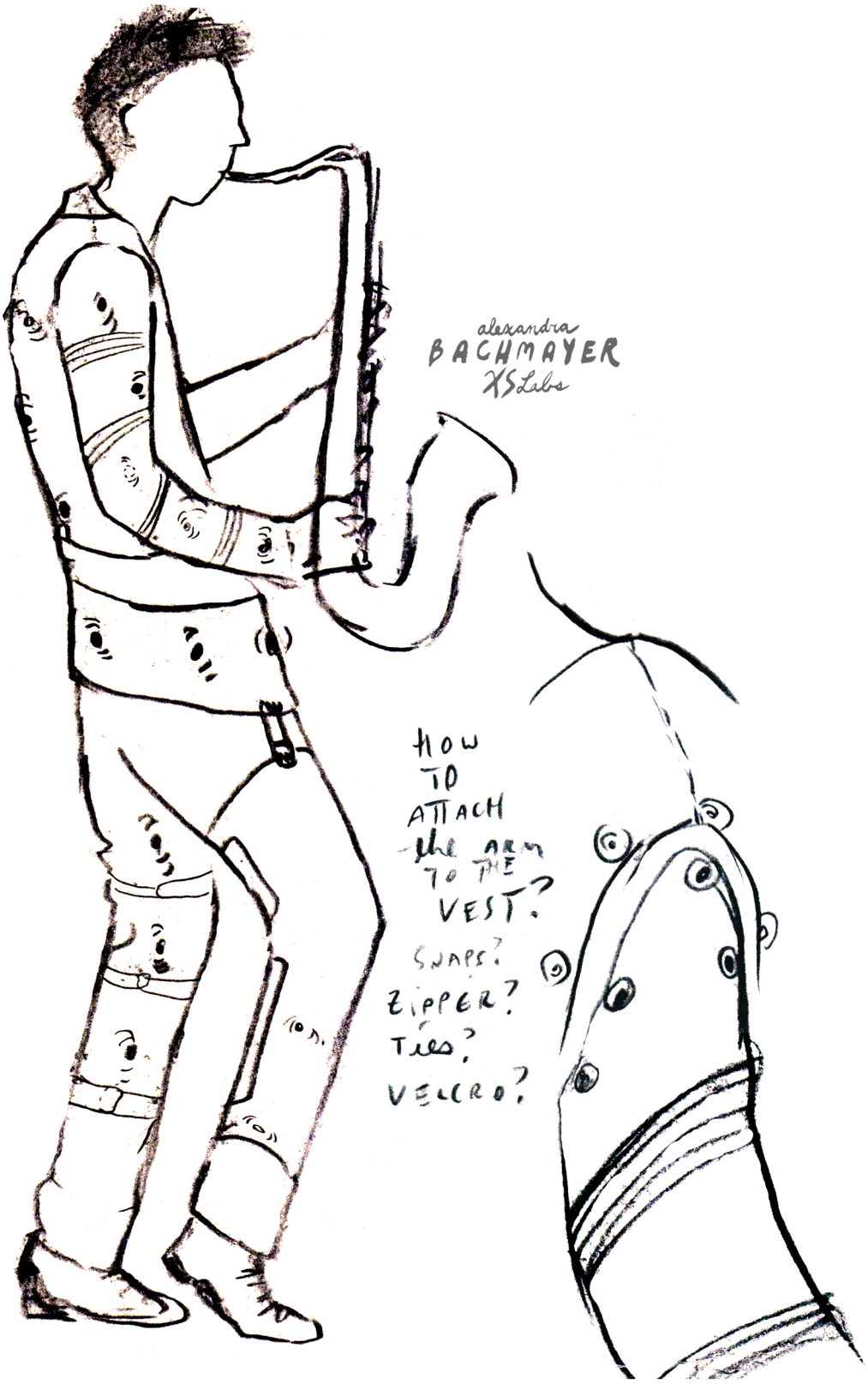


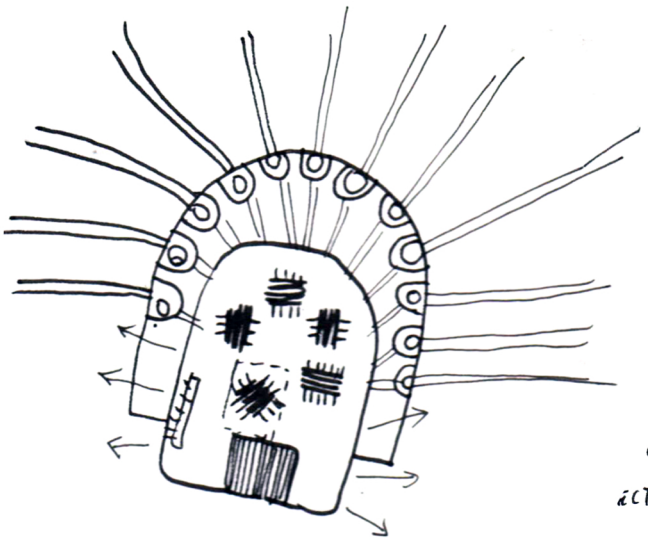

alexandra
BACHMAYER
XSLabs

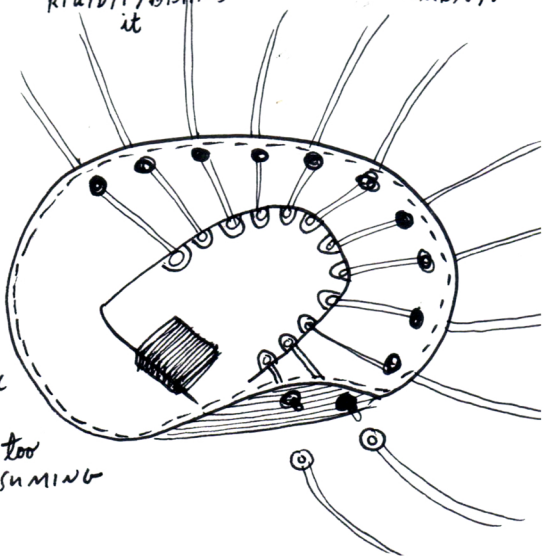




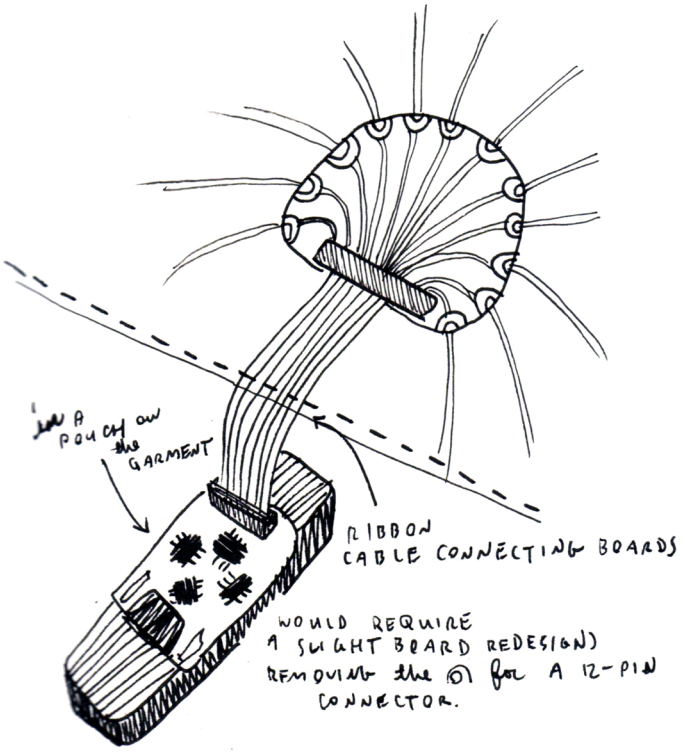


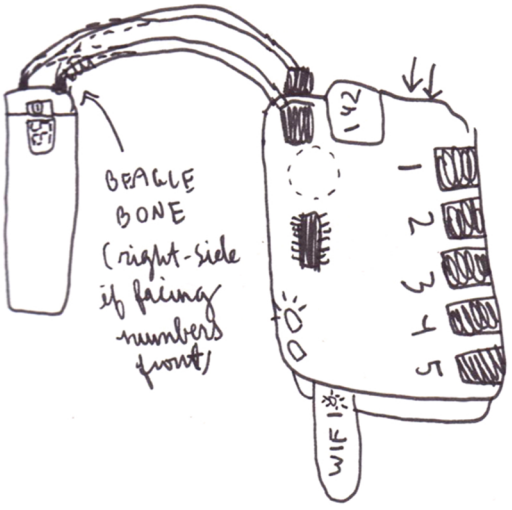

alexandra
BACHMAYER
XSLabs
HOW
TO
ATTACH
the ARM
TO THE
VEST?
SNAPS?
ZIPPER?
TIES?
VELCRO?





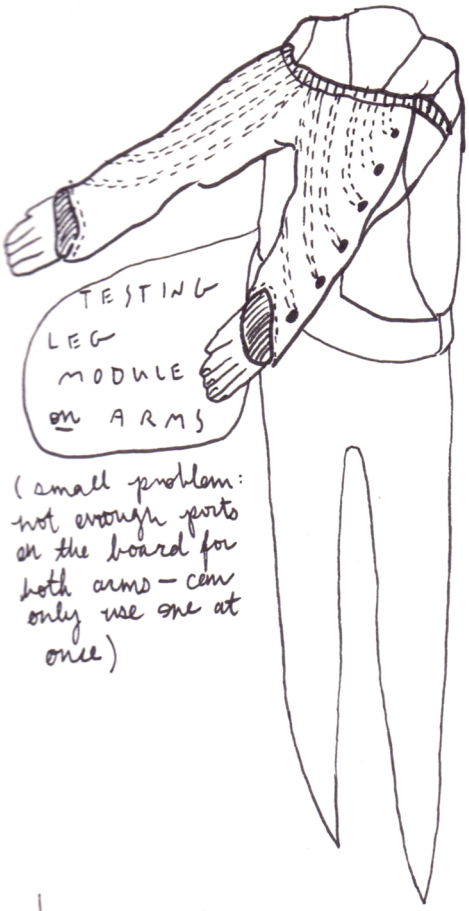
XS Labs
alexandra
BACHMAYER





+++POTENTIAL+++

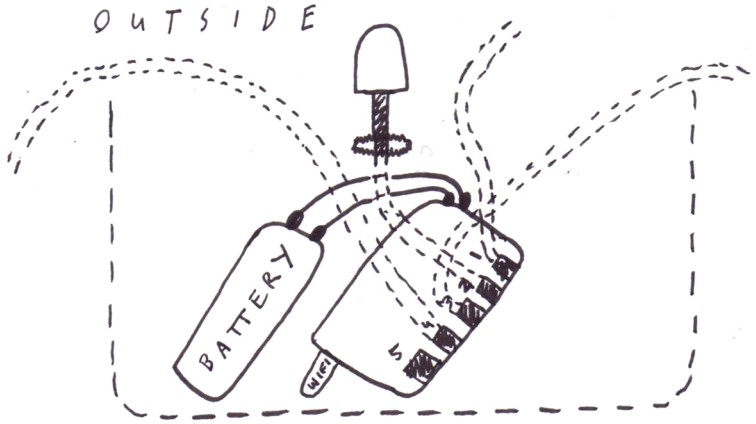
pocket improvements for the next iteration:



(small problem: not enough ports on the board for both arms — can only use one at once)

BOARDS & BATTERY

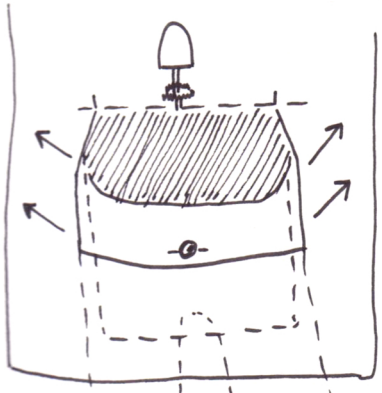
SHOULD HAVE THEM ACCESSIBLE from THE OUTSIDE

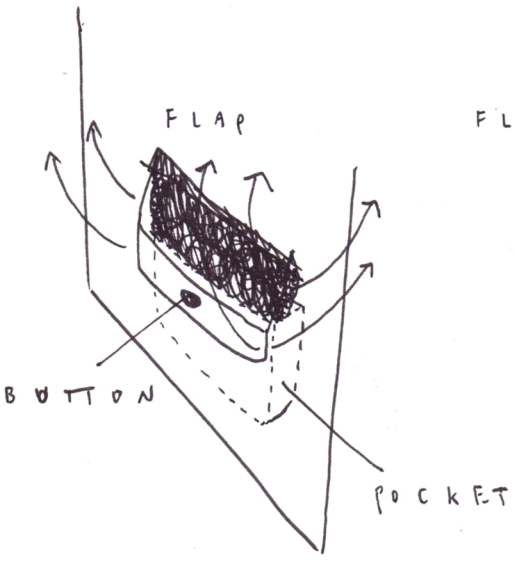


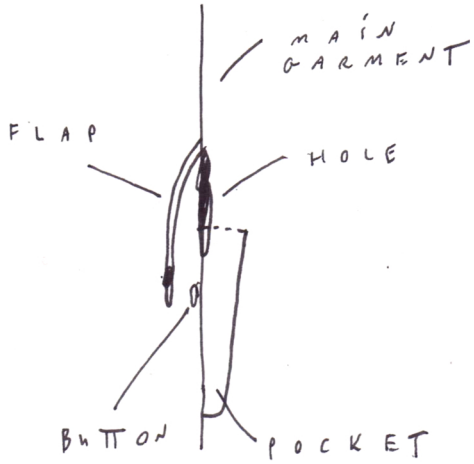
CURRENT POCKET on SUIT

YEAR ONE

MAYBE WE CAN MAKE it SO THAT THE POCKET is ACCESSIBLE from BOTH SIDES.







XS Labs

alexandra BACHMAYER

• S E N S O R • D A T A •
we're interested in using.

XSLabs
alexandra
BACHMAYER

• L O C A T I O N •

(GPS / RI / RELATIVE POSITION / MARG)
↳ absolute, 3D orientation location

• H E A R T • R A T E •



(RR INTERVAL)
WOULD BE NEAT to KNOW WHEN SOMEONE'S ♡ BEATS (MICROPHONE + STETHOSCOPE?)

• G A L V A N I C • S K I N • R E S P O N S E •

moisture of skin

• O R I E N T A T I O N •

(accelerometer / Gyroscope (marg) 3D orientation)
(magnet

might need to buy a breakout board for marg's 9DOF
perhaps will need several placed all over the body (one on chest, 2 on each arm)

9DOF // MARG
(3-axis of gravity,

• U V / A M B I E N T • L I G H T (?) •

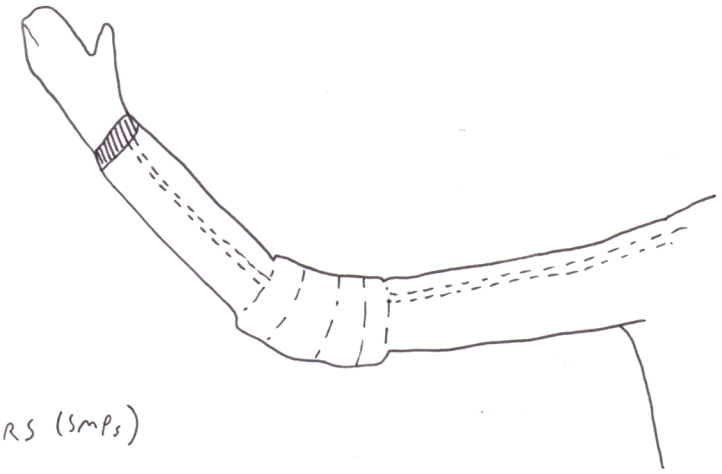
walking into a light / outdoor or indoors.

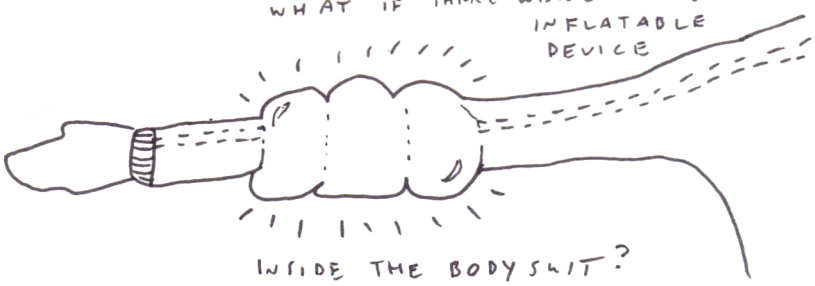
• A L T I M E T E R •

relative to starting point (in cm:)
how would it filter out awkward hand movements?
probably doesn't.

• A U D I O M I C / C L I P on I N S T R U M E N T •

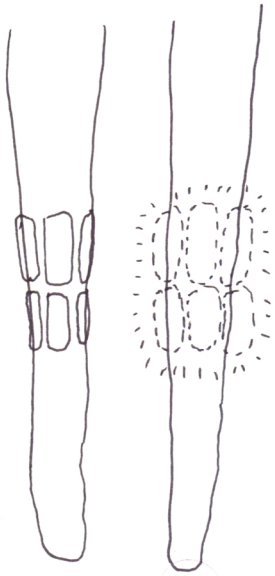
- SHAPE MEMORY TEXTILES
  - NICKEL-TITANIUM.
- PIEZO ELECTRIC CERAMIC?
- SHAPE-MEMORY POLYMERS (SMPs)
- SHAPE-MEMORY ALLOYS



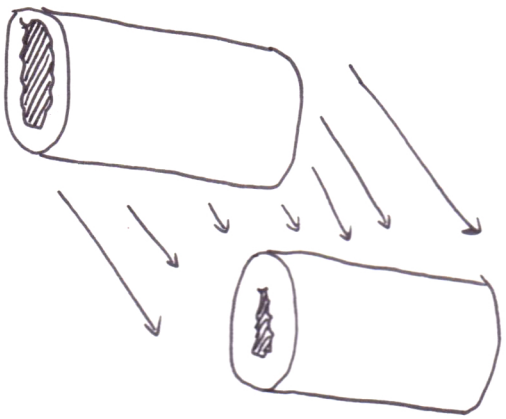


INSIDE THE BODY SUIT?
AT STRATEGIC POINTS THAT COULD RESPOND to SPECIFIC STIMULI or SENSORS.





QUITE LIKE "WATER WINGS" or EVEN one OF THOSE BLOOD PRESSURE MONITORS



XS Labs
alexandra
BACHMAYER

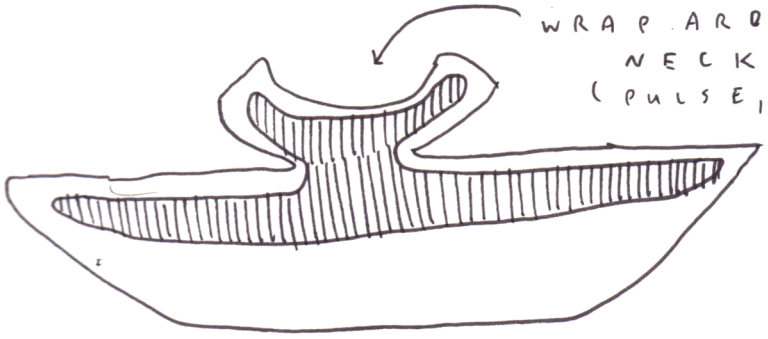
POTENTIAL SENSOR-in-GARMENT PLACEMENT IDEAS

keep the garments separate? have them in a scarf or over-the-shoulder shawl? have them directly in the arms? should we save the arms for sensors? sensors for communicating between musicians or just for tracking the body of the musician? voluntary or involuntary?

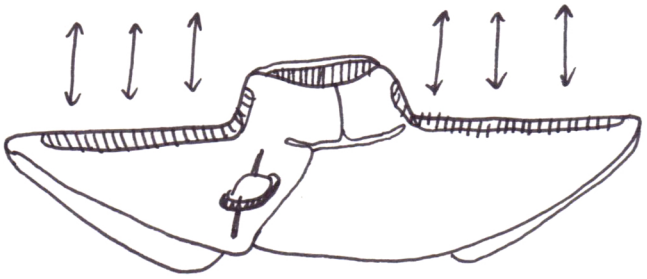
SENSORS around the NECK? for SWEATY for MUSICIAN?

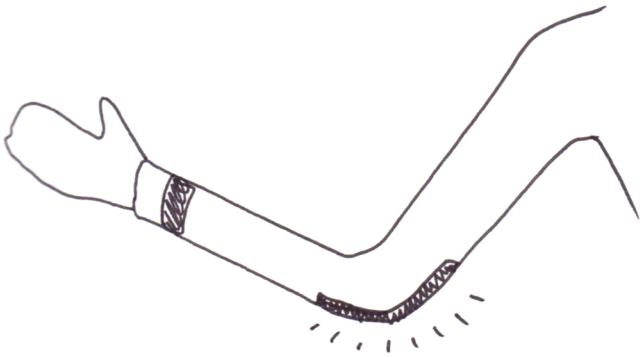


XS Labs
alexandra BACHMAYER



RAISE and DROP SHOULDERS

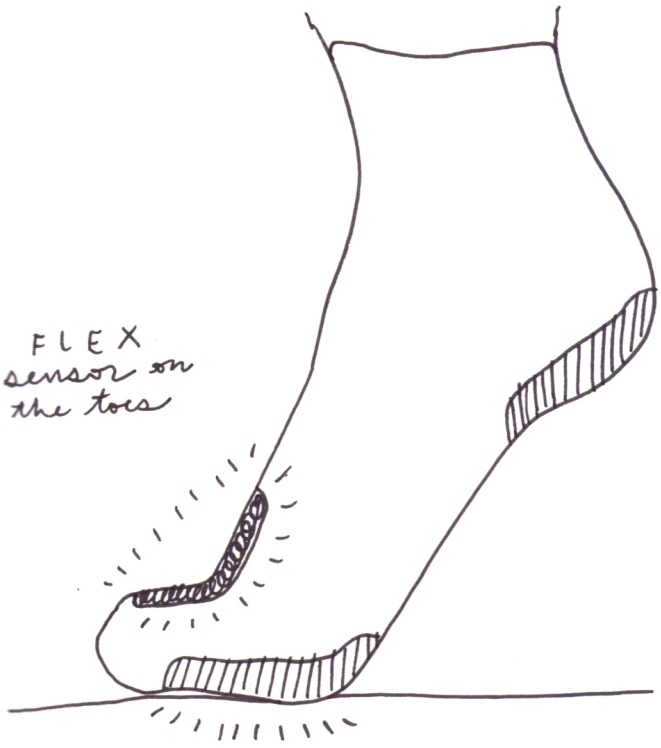




FLEXED
FLEX SENSOR



RELAXED
flex sensor



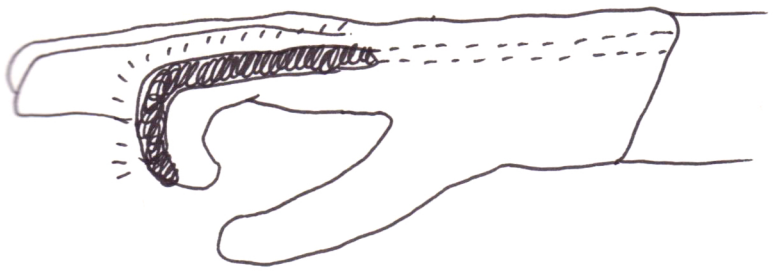
the foot
PROBABLY
WON'T BE USED
for MOTORS.
might be a
PERFECT SPOT

PRESSURE
or FORCE sensor
in the ball or
HEEL of the foot?

PERHAPS FLEXING A
SINGLE DIGIT CAN BE
A WAY TO VOLUNTARILY
COMMUNICATE BTWN
MUSICIANS?



at least the ones that dont need that hand
to play their instrument.

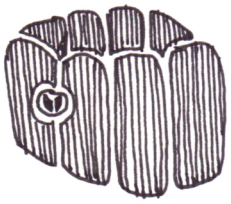


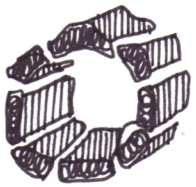
XS Labs
alexandra
BACHMAYER

HANDS and FEET ARE BOTH IDEAL for ELECTRO DERMAL ACTIVITY

ELECTRO MYOGRAPHY (EMG)

↳ the MYO





myo ALPHA

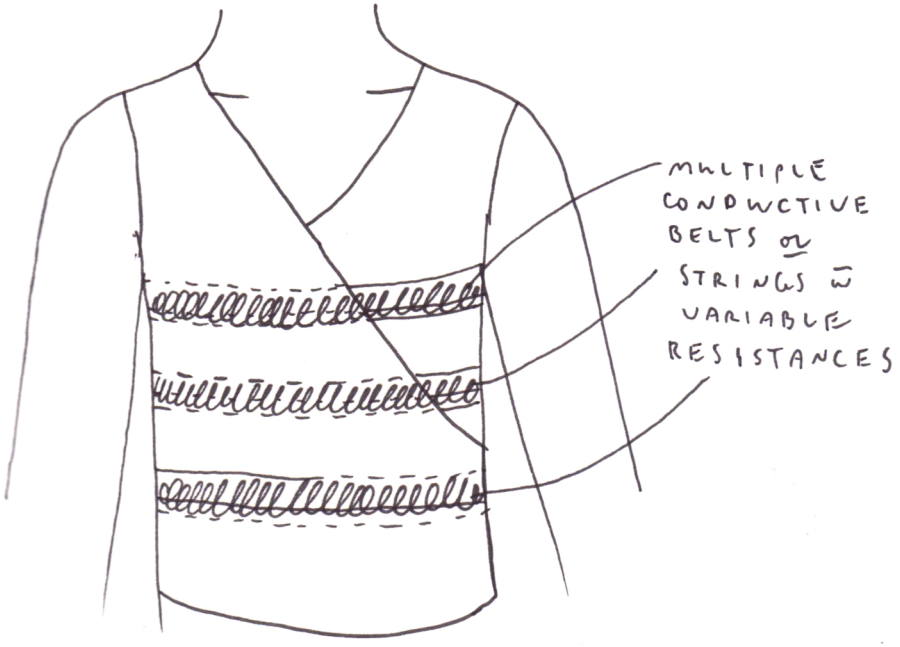
(GALVANIC SKIN RESPONSE)

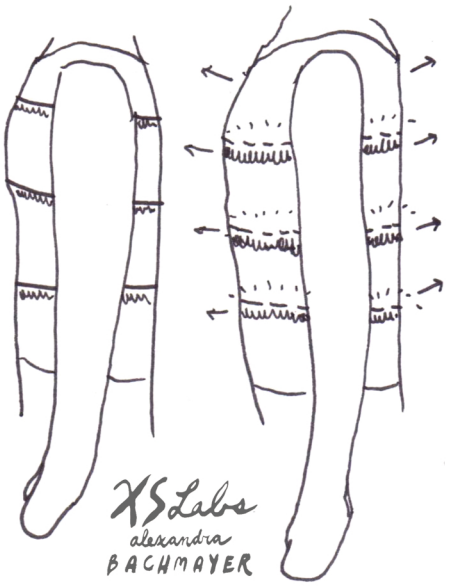
INTEGRATE BITalino into the SUIT (if we go this route)

↳ look into BITalino COMMUNITY and PROJECTS.

RESPIRATION SENSING

↳ belt around chest with conductive belt





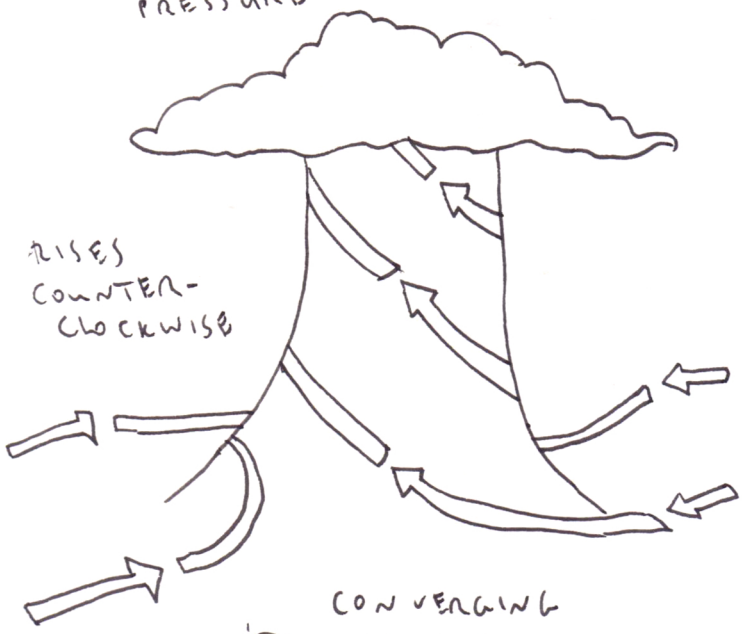
MARG sensors

↳ motion sensors.

↳ relative to magnetic north

LOW PRESSURE

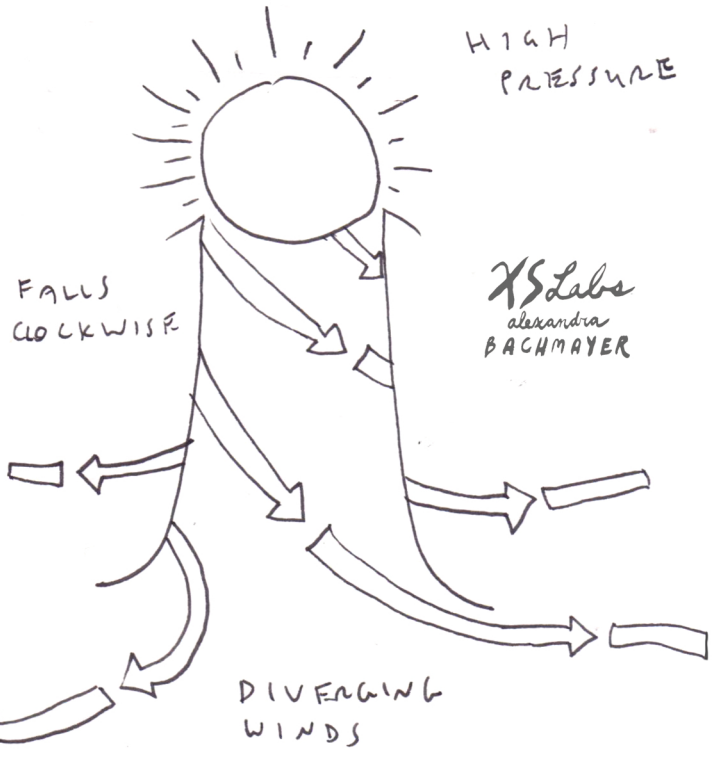
RISES COUNTER-CLOCKWISE



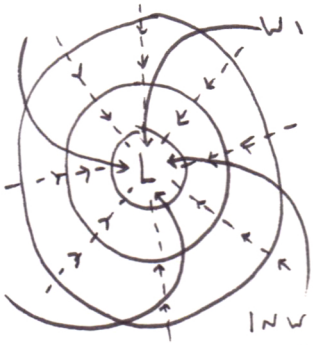
HIGH PRESSURE

FALLS CLOCKWISE

XSLabs alexandra BACHMAYER

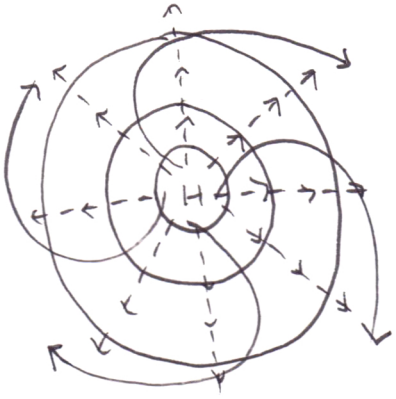


CONVERGING WINDS



CONVERGENT

INWARD PRESSURE FORCE



OUTWARD PRESSURE FORCE

DIVERGENT

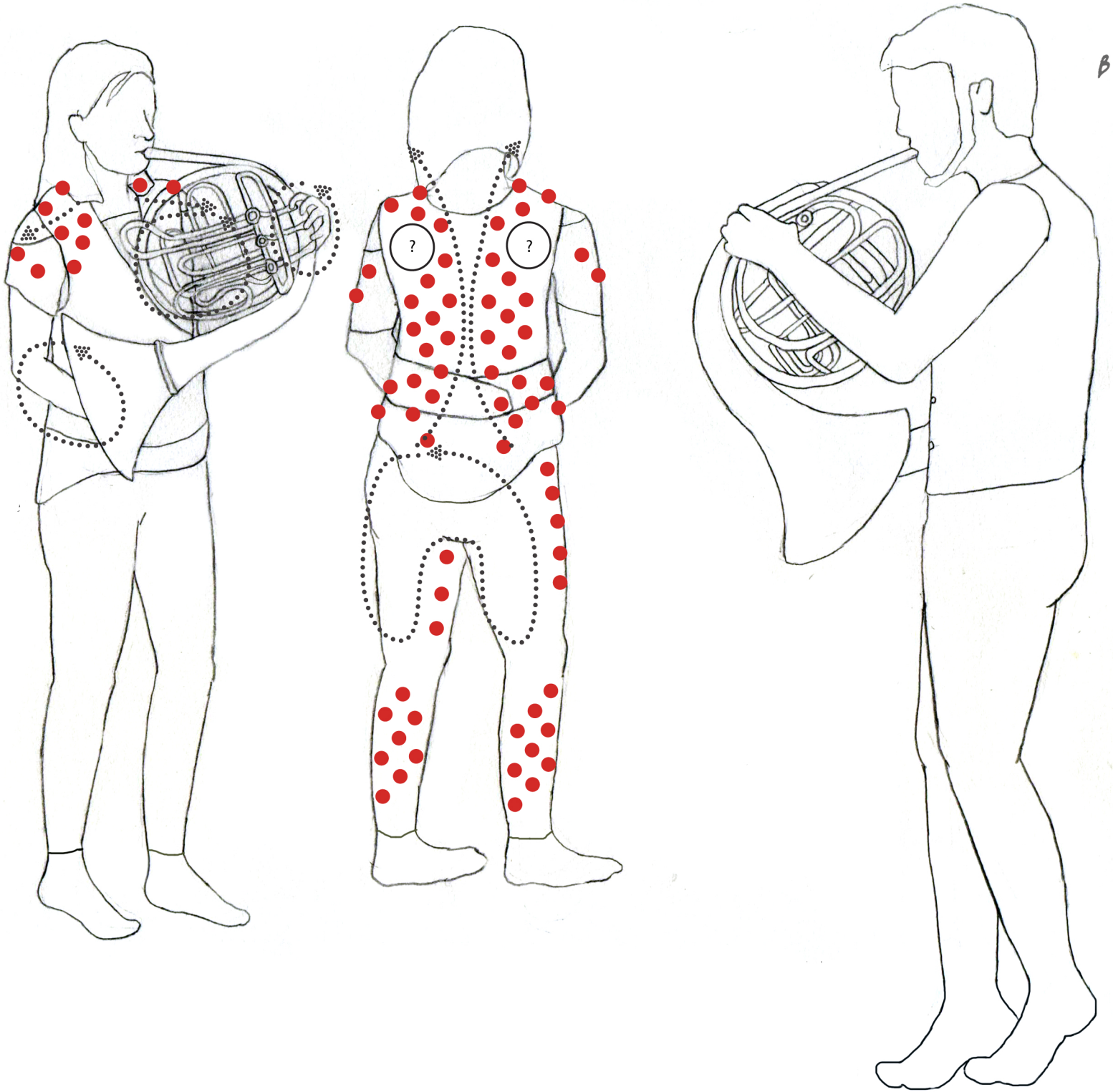
DIVERGING WINDS

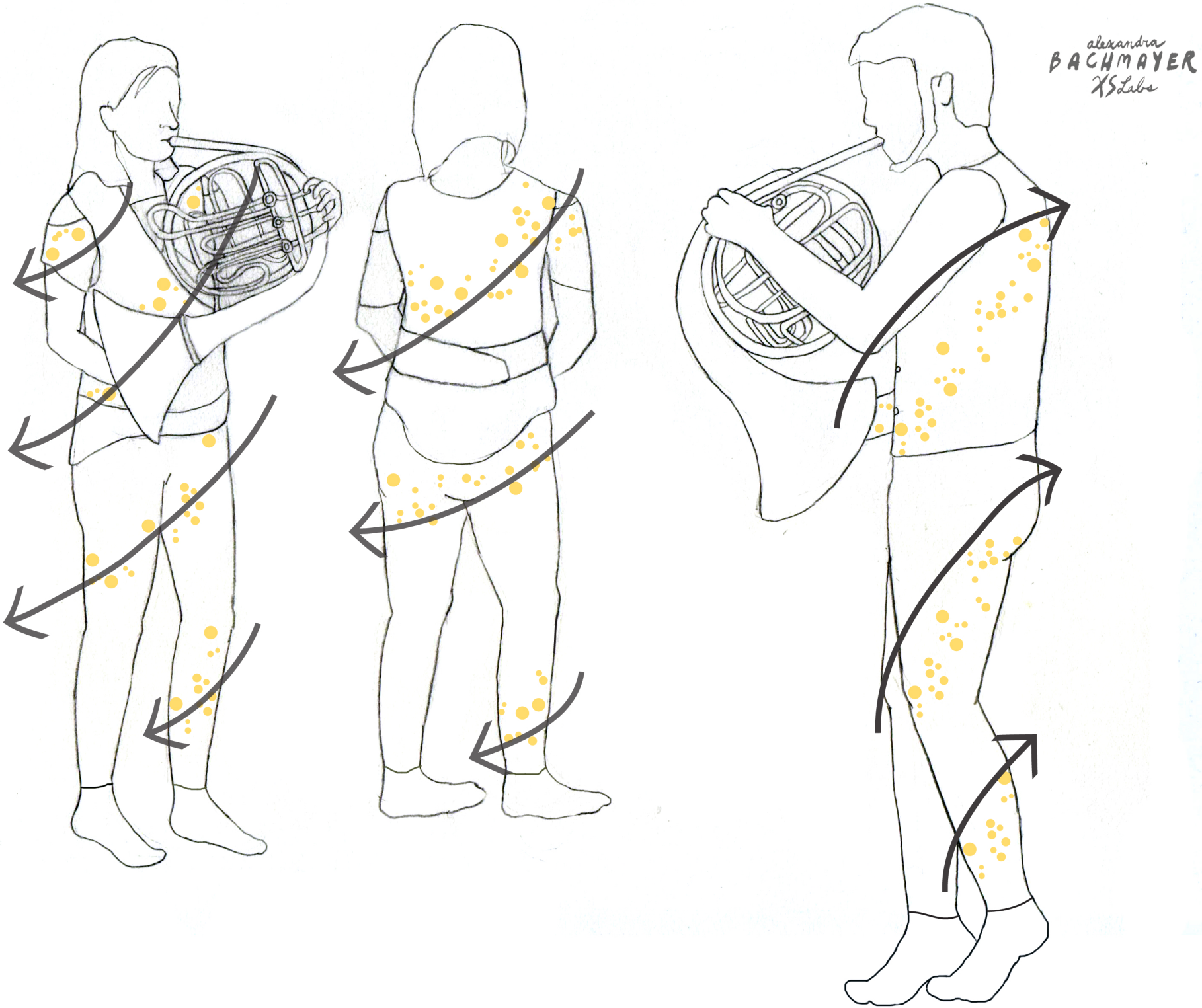
AURORA and MAGNETIC FORCE and FIELD of the PLANET

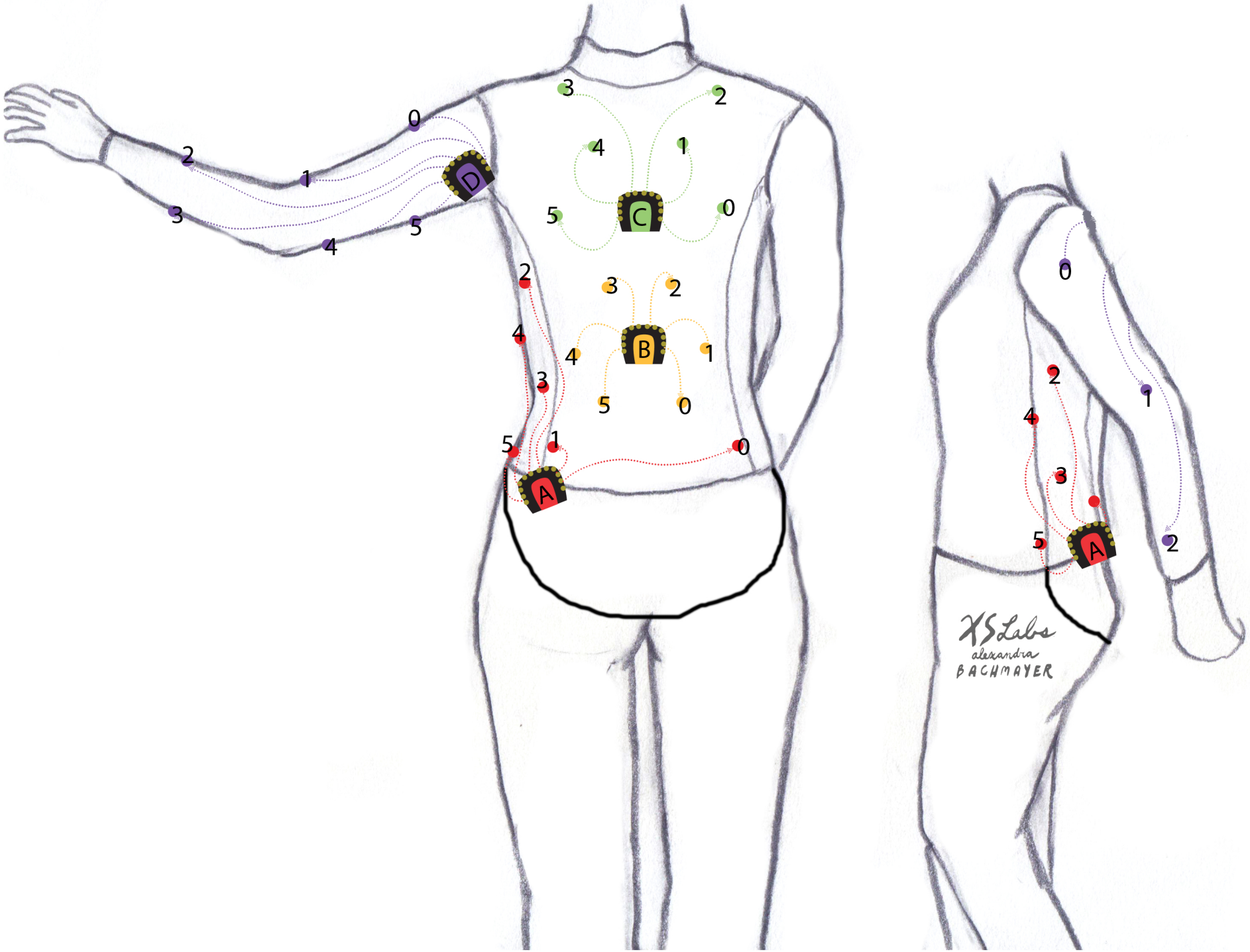


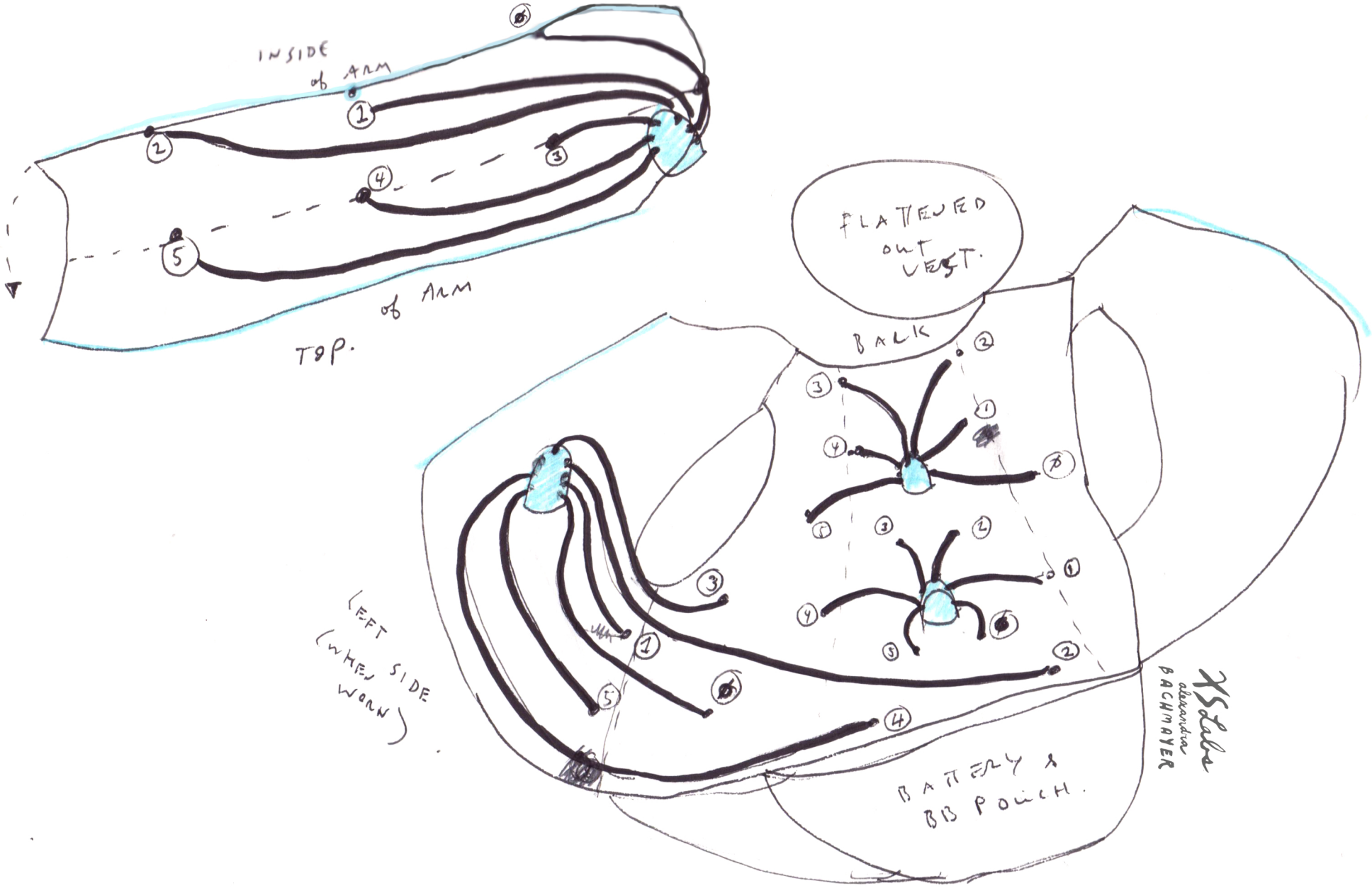
LIGHT PATTERNS for CSENGE'S PIECE.

- VIRUSES
- DUST
- WAVES and TIDES.
- the GAME of LIFE (rules for the lights).
- WEATHER SYSTEMS (WORKING WITH SCALE on the BODY)
- aurora borealis

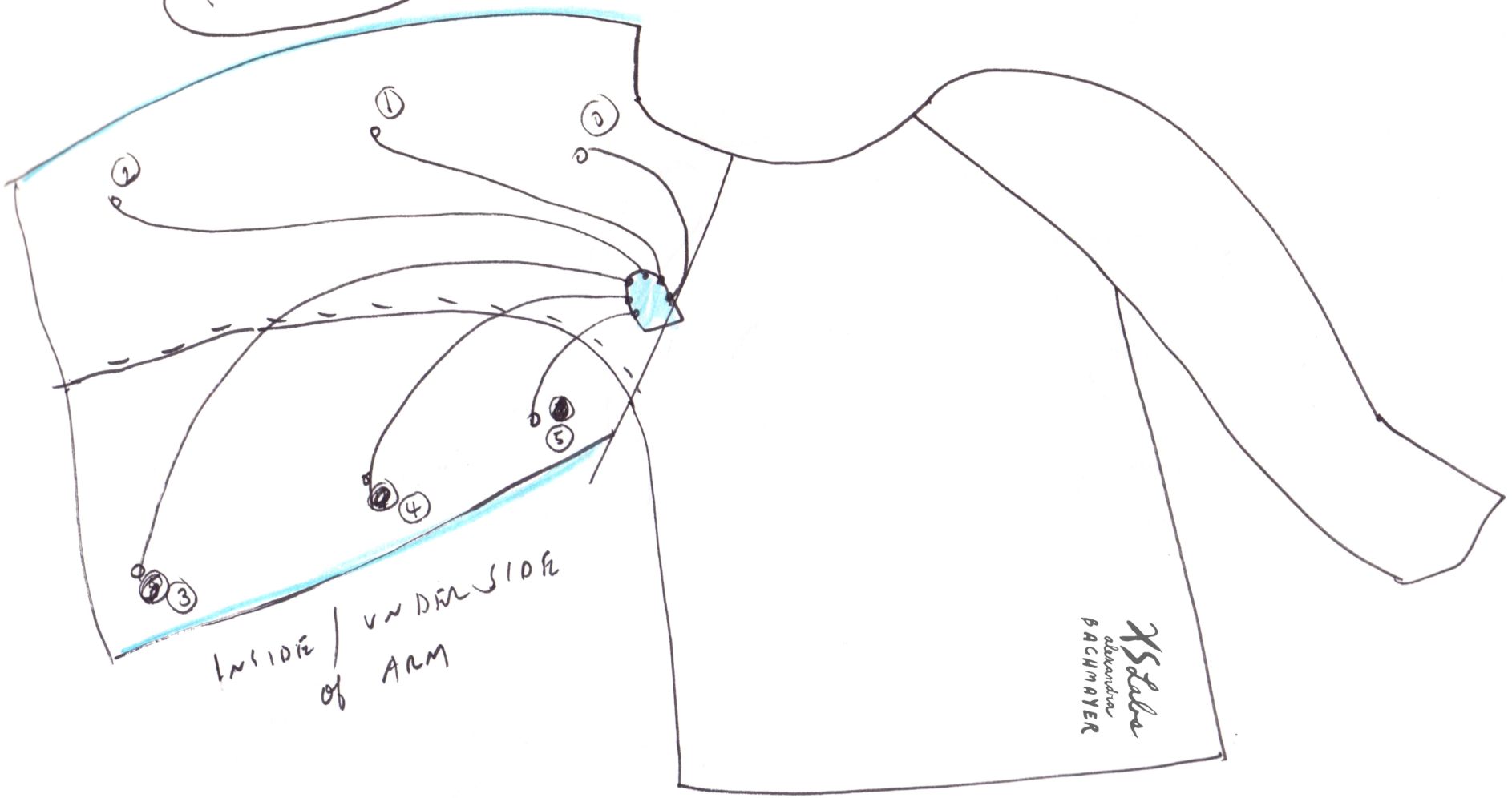

alexandra
BACHMAYER
XSLabs
?
?


alexandra
BACHMAYER
XSLabs

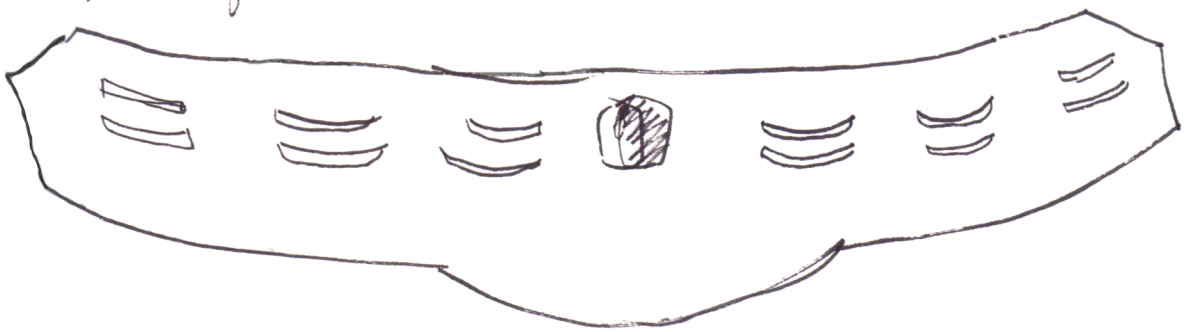

D
C
B
A
XS Labs
alexandra
BACHMAYER


INSIDE of ARM
TOP of ARM
FLATTENED OUT VEST.
BACK
LEFT SIDE (WHEN WORN)
BATTERY & BB POUCH.
XS Labs
Alexandra Bachmayer

PIETRO'S ARM PROTOTYPE.



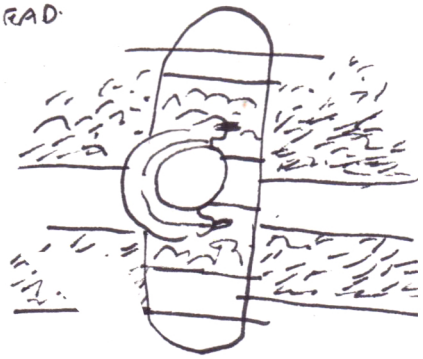
BELT W VELCRO
AND SNAPS for the BOARD.



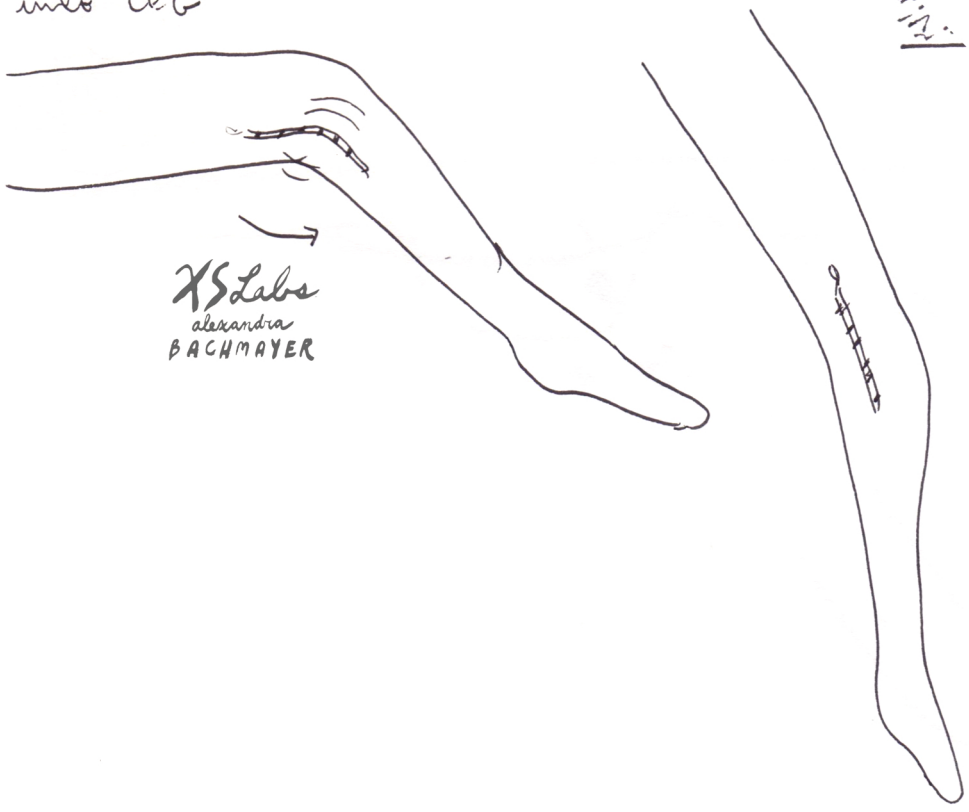


CONDUCTIVE
VELCRO STRIPS.

CONNECTING
CONDUCTIVE THREAD.

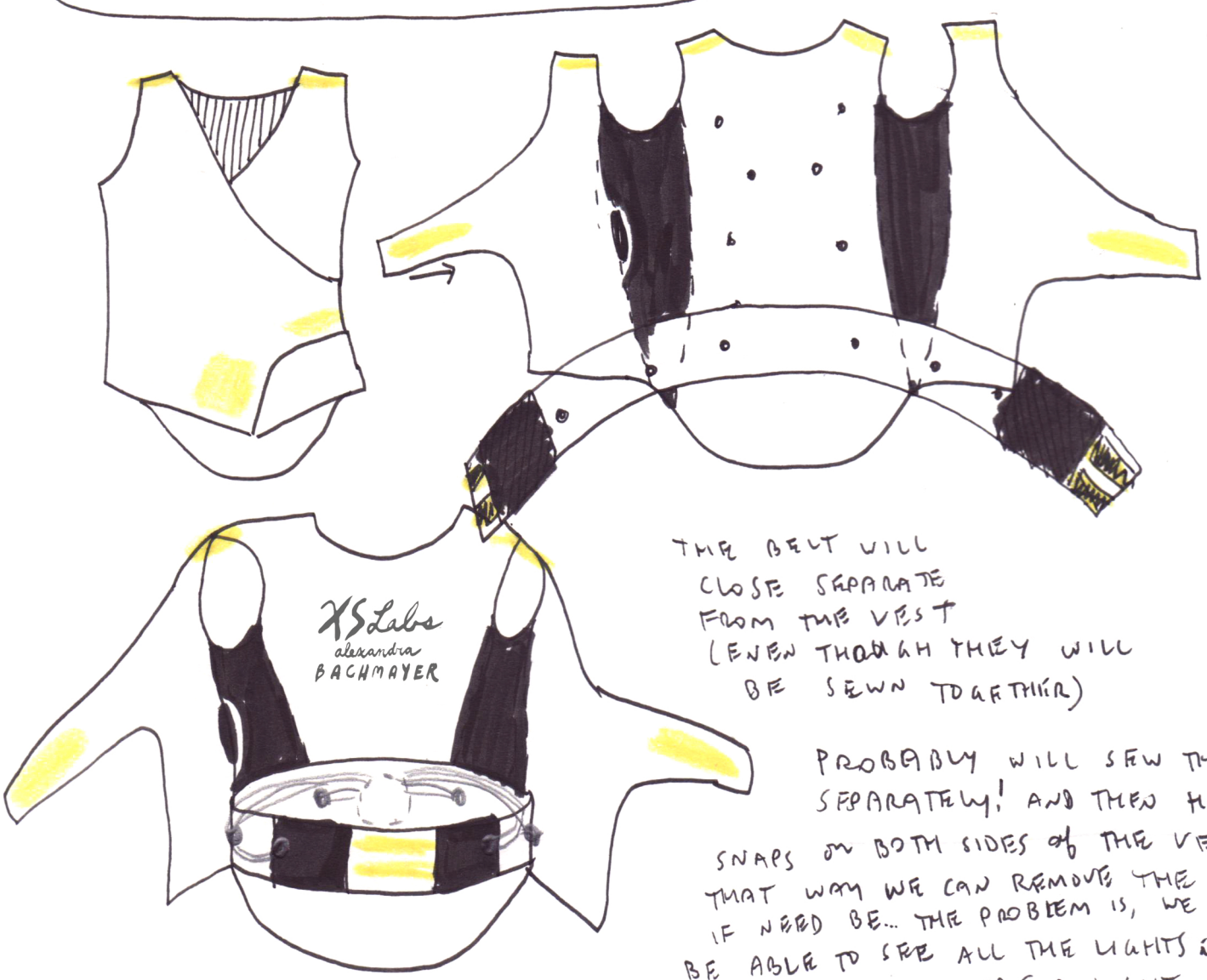


HOW TO INCORPORATE FLEX SENSORS
into LEG



XS Labs
alexandra
BACHMAYER

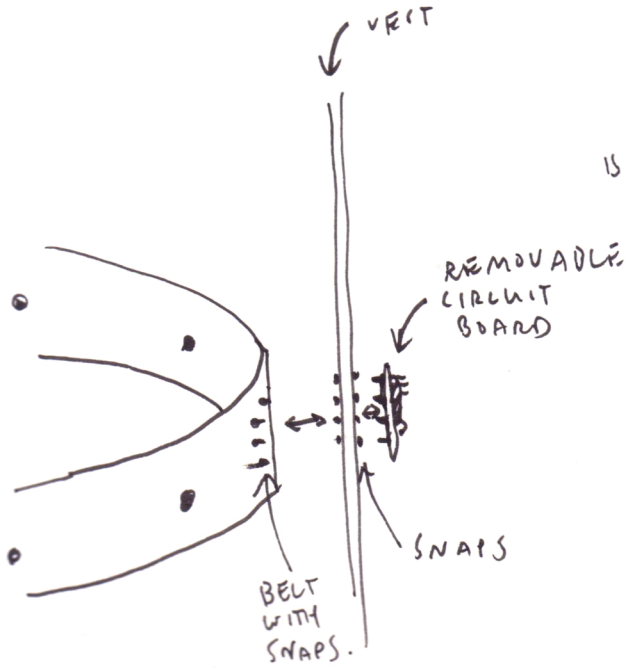
HOW TO INCORPORATE THE BELT INTO THE VEST FOR BOTH THE MEN'S and WOMEN'S SUITS



THE BELT WILL CLOSE SEPARATE FROM THE VEST (EVEN THOUGH THEY WILL BE SEWN TOGETHER)

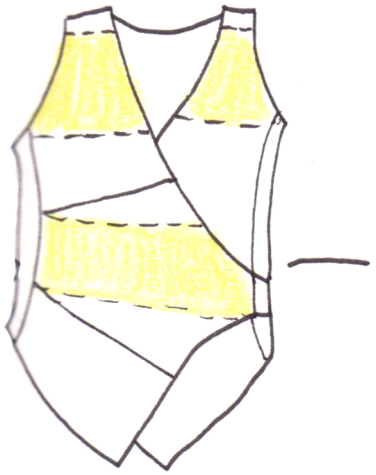
PROBABLY WILL SEW THEM SEPARATELY! AND THEN HAVE SNAPS ON BOTH SIDES of THE VEST? THAT WAY WE CAN REMOVE THE BELT IF NEED BE... THE PROBLEM IS, WE WONT BE ABLE TO SEE ALL THE LIGHTS if EACH OF THE MOTORS HAS A LIGHT WITH IT.

IS BEING ABLE TO REMOVE THE BELT OVERKILL? PERHAPS. TEST OUT BOTH.



↗ WITH SUIT SO FAR (A ING THE SUIT FOR A DANCE CONTEXT)

- BIGGEST ISSUES: BACK POUCH RELOCATION.? POSSIBLY TO THE STERNUM. // CHEST
- LEG BOARDS (MOVE THEM MORE TO THE FRONT)





WHAT IF WE MOVED the BACK BOARDS to the TOPS of THE SHOULDERS ?

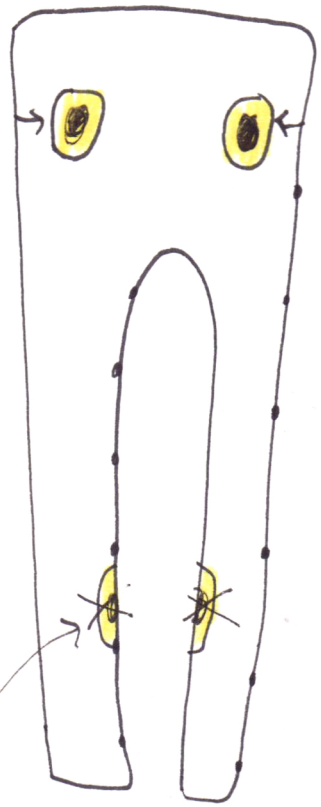


REMOVE POUCH FROM HERE (STILL KEEP it JUST in CASE?)

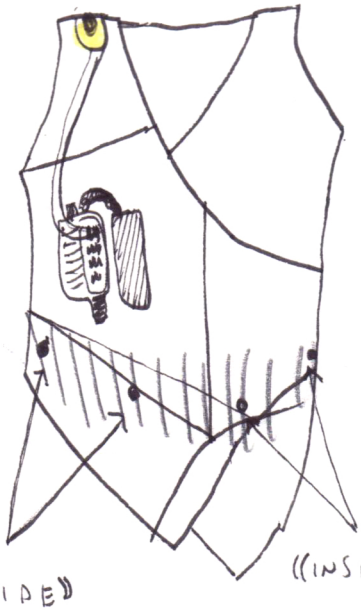
BACK



VS ?

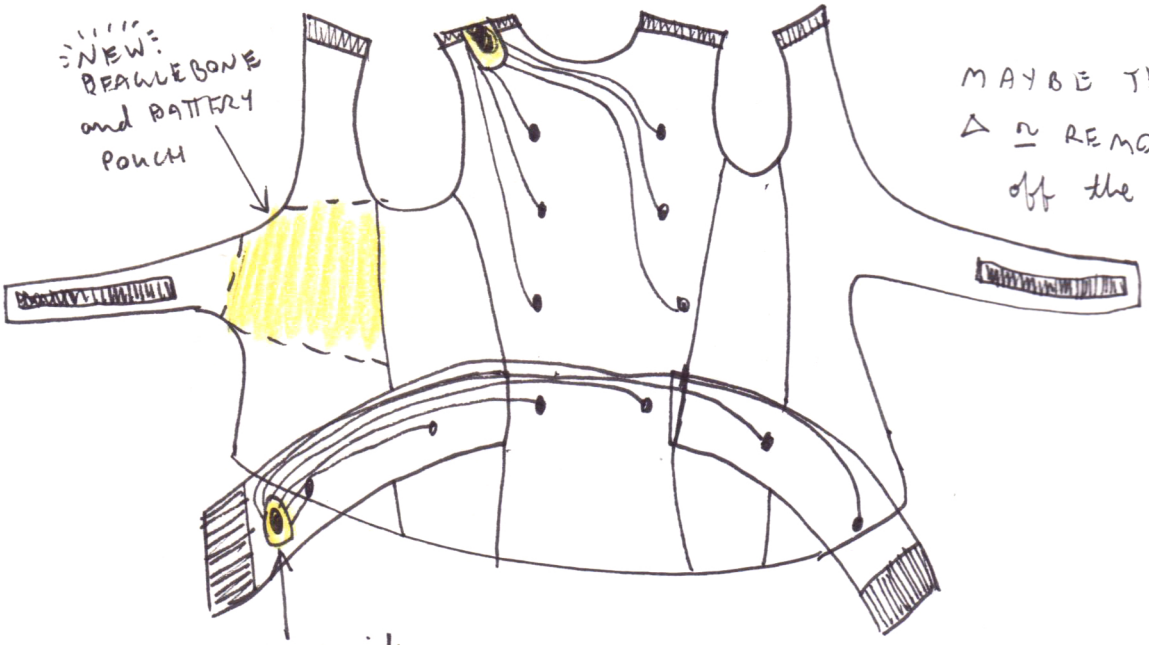


CABLES TOUCH TOO OFTEN (WOULD NEED MUCH LONGER ETHERNET CABLES)



((INSIDE)) ((INSIDE))

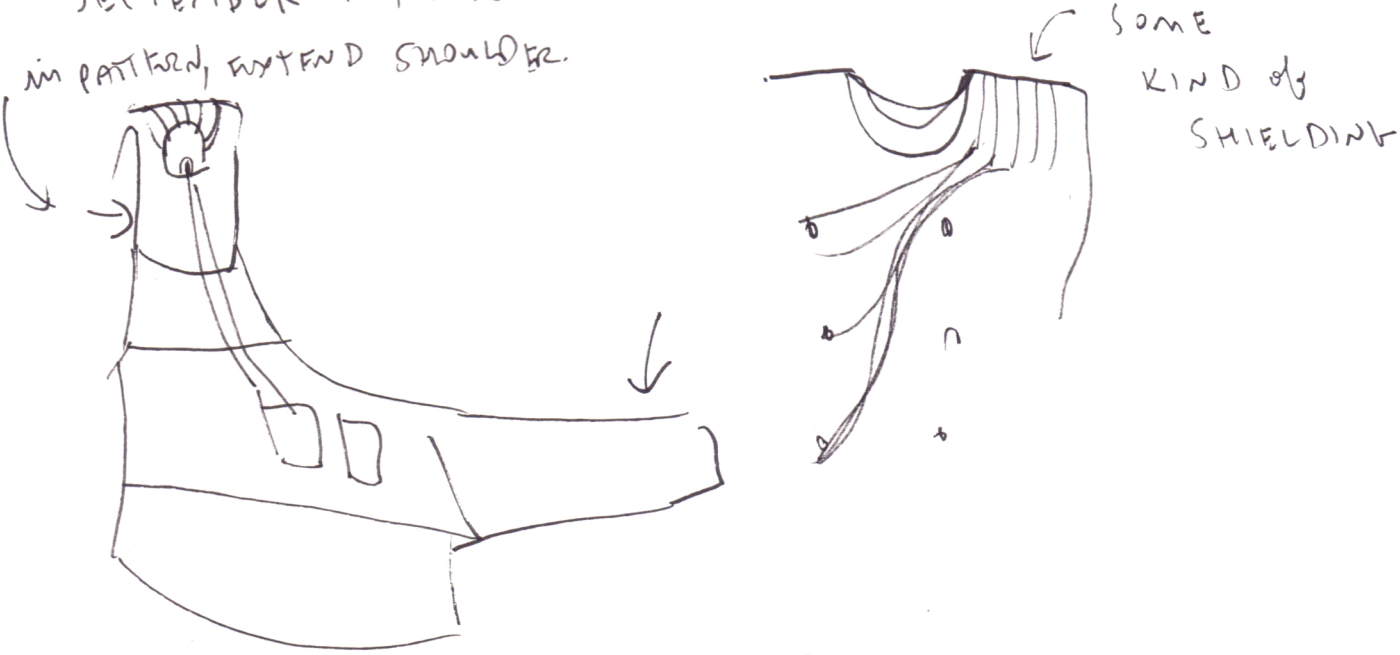
THIS WON'T WORK IF WE ARE DOING A DOUBLE BELT



MAYBE THIS COULD ± REMOVE THE BOARDS off the BACK

XSLabs
alexandra
BACHMAYER

SEPTEMBER 9TH, 2016.



- EXTENDED POCKET? - BELT / WAIST / ARMS EXTENSION?
- PROTECTIVE CASE for CIRCUIT BOARDS.
  - SOME KIND of SOFT // HARD CASE

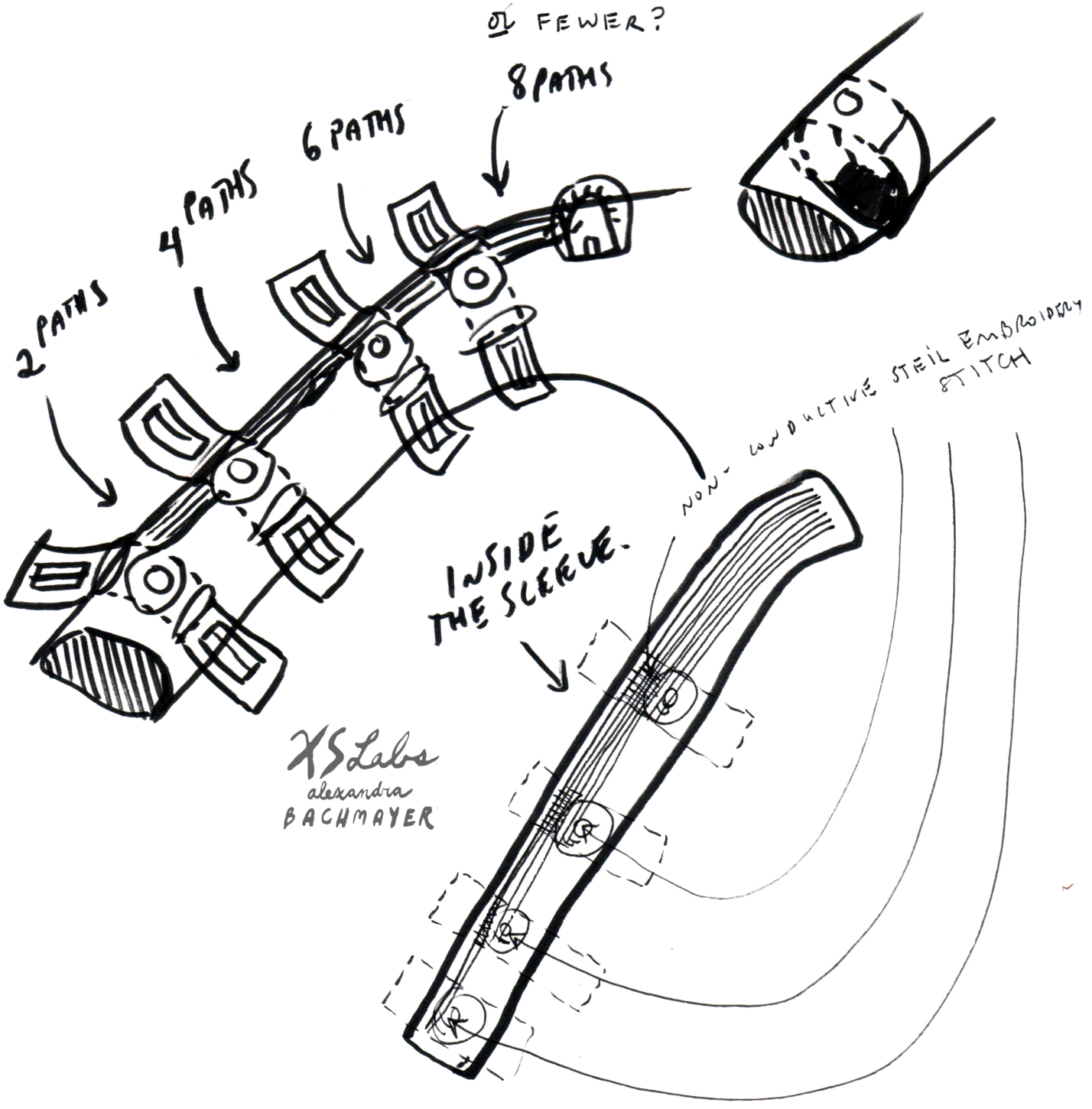
NOV 8 / 16

french horn magic

ARM – STRETCH MATERIAL

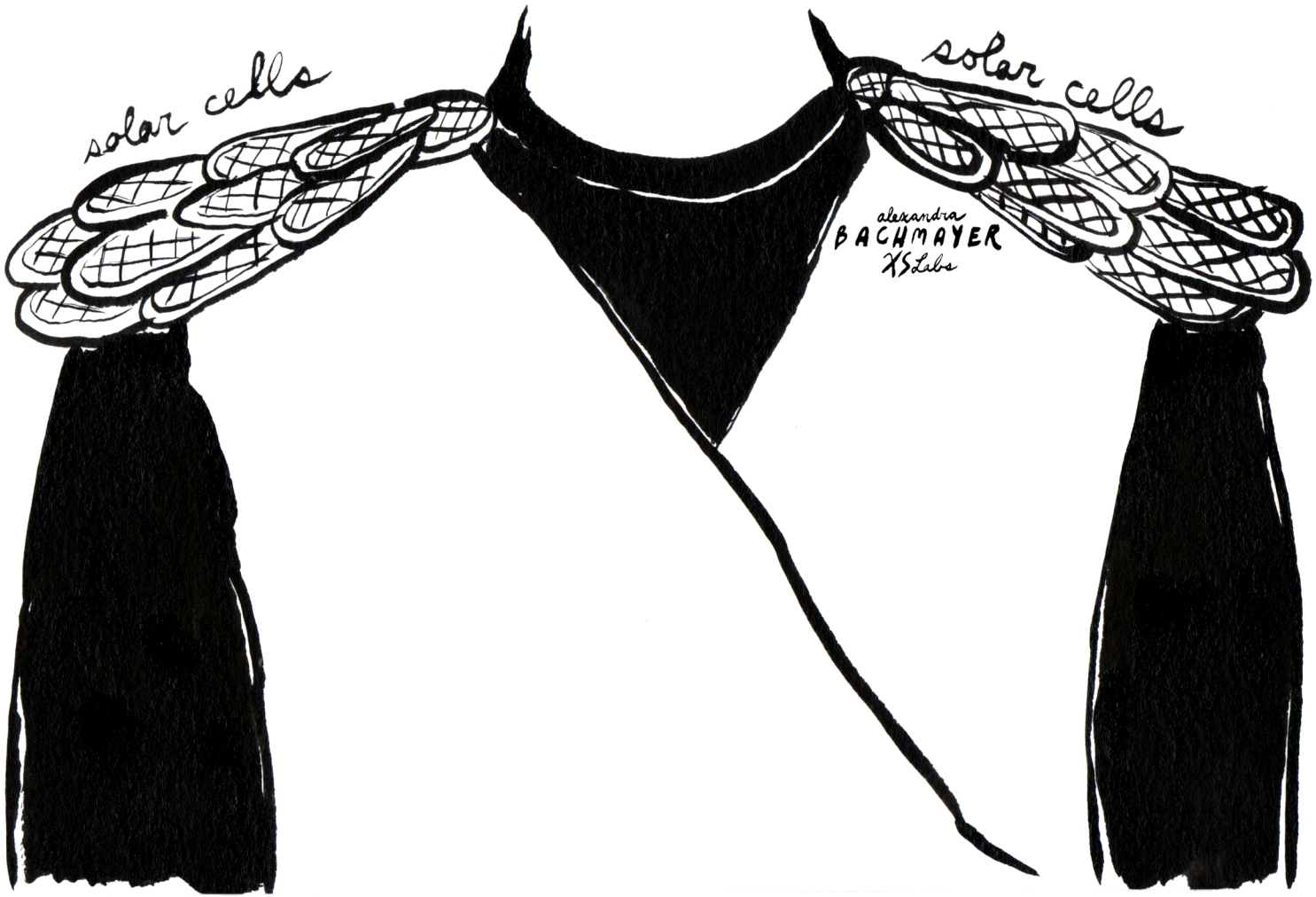
– PLACEMENT of MOTORS ON ARM.
(too CLOSE TOGETHER)

└ MAYBE JUST HAVE THEM
on the OUTSIDE?
or FEWER?



XS Labs
alexandra
BACHMAYER

alexandra
BACHMAYER
XS Labs


solar cells
solar cells
alexandra
BACHMAYER
XS Labs


alexandra
BACHMAYER
XSLabs


alexandra
BACHMAYER
XS Labs


alexandra
BACHMAYER
XS Labs


vibation plus
the sensation
of someone
poking you
in the back
alexandra
BACHMAYER
XS Labs


alexandra
BACHMAYER
XS Labs