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EXPLORING BIOMIMETIC INTERFACES

Day 4

CIID 2013 July 14 - 26
Exploring Biomimetic Interfaces
Gabriella Levine + Genevieve Hoffman

JULY 2013

CIID Summer Course

Exploring Biomimetic Interfaces

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DESIGN BRIEF

How might we design a biomimetic interface that addresses waste reduction and repurpose waste?

Build a system that explicitly draws inspiration from an example of feedback inhibition loop in biology.

Your system must contain an interface with both a digital layer and a tangible layer.

SCHEDULE

2 presentations

This Friday 4-6 PM [presentation & feedback]

*Next Friday 4-6 PM [presentation & exhibition,
public]*

TODAY

1. Project launch [10:15 - 10:45]
3. Get smart fast: Empathy research [10:45 - 11:20]
2. Define the user, system, & waste [11:30 - 12:00]
4. POV statement [user, need, insight] [12:00 - 12:15]
5. TEAM HUDDLES [12:15 - 1:00]

LUNCH

6. Run an ideaton session, select ~5 concepts [2:00 - 2:30]
7. Create quick prototypes [2:30 - 4:30]
8. Test & Iterate, Capture feedback [4:30 - 5:00]
5. Elevator pitch [5:00 - 5:30]
6. Debrief [5:30 - 6:00]

THE SYSTEM

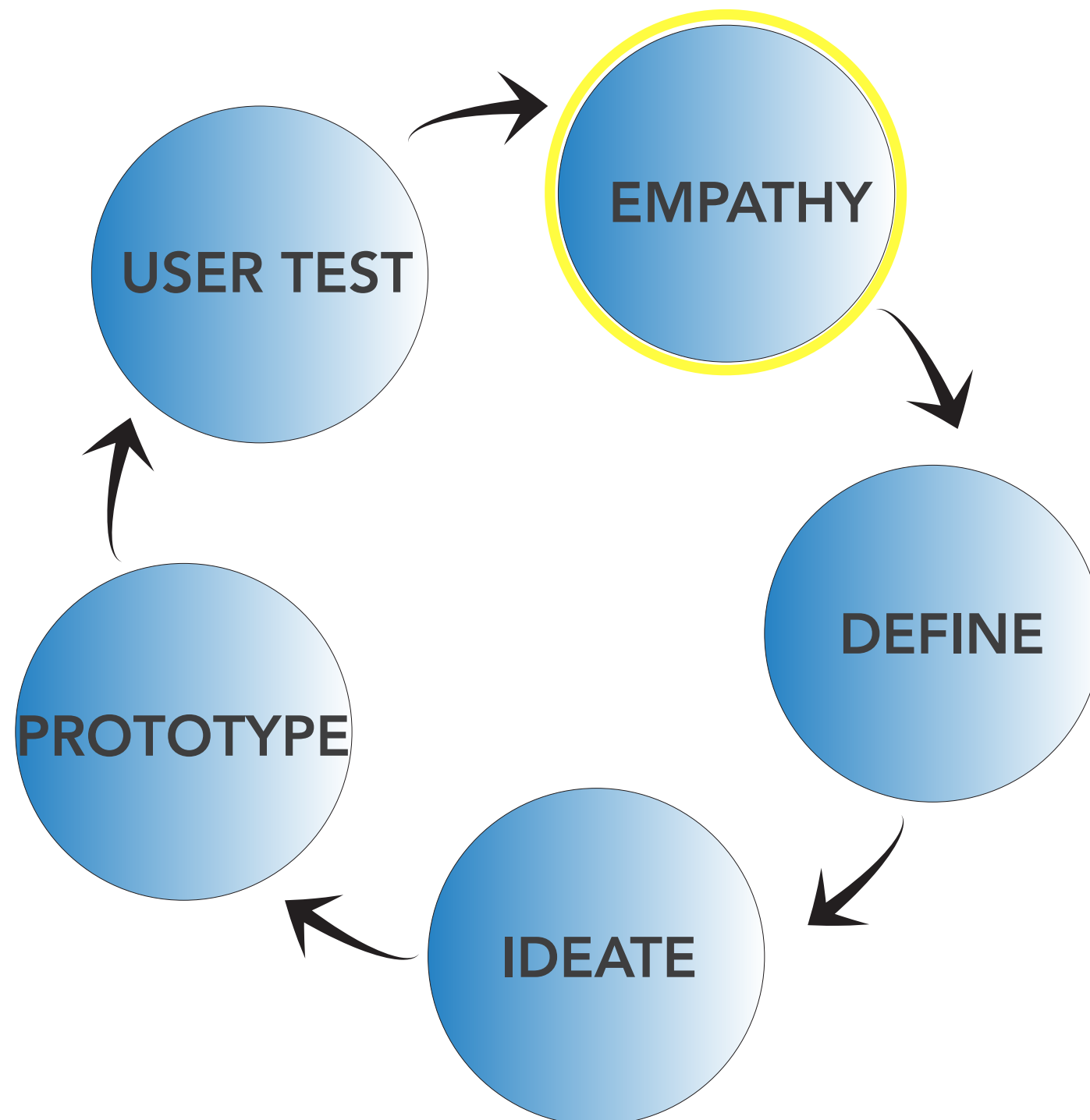
What are your initial ideas?

Who is your user?

HEADLINE YOUR IDEA
[15 minutes, 3 ideas, 3 postits]

CHOOSE ONE IDEA

EMPATHY



EMPATHY RESEARCH

1. Define the user, interface, and feedback loop. What biological processes are mimicked?

2. Define the waste you are addressing: is it physical, chemical, energy, time?

3. What is the input and outputs?

4. How will you research the user as fast as possible? What or Who will you observe and engage?

6. WHAT IS YOUR RESEARCH PLAN?

GO OUTSIDE

How are you engaging biomimicry?

What cues from biological systems can your system take?

What or Who will you observe and engage?

WHAT IS YOUR RESEARCH PLAN?

GO OUTSIDE

OBSERVE SYSTEMS of WASTE

OBSERVE USERS

EXPLORE

Define the User's needs, the system the waste, and the interactions :

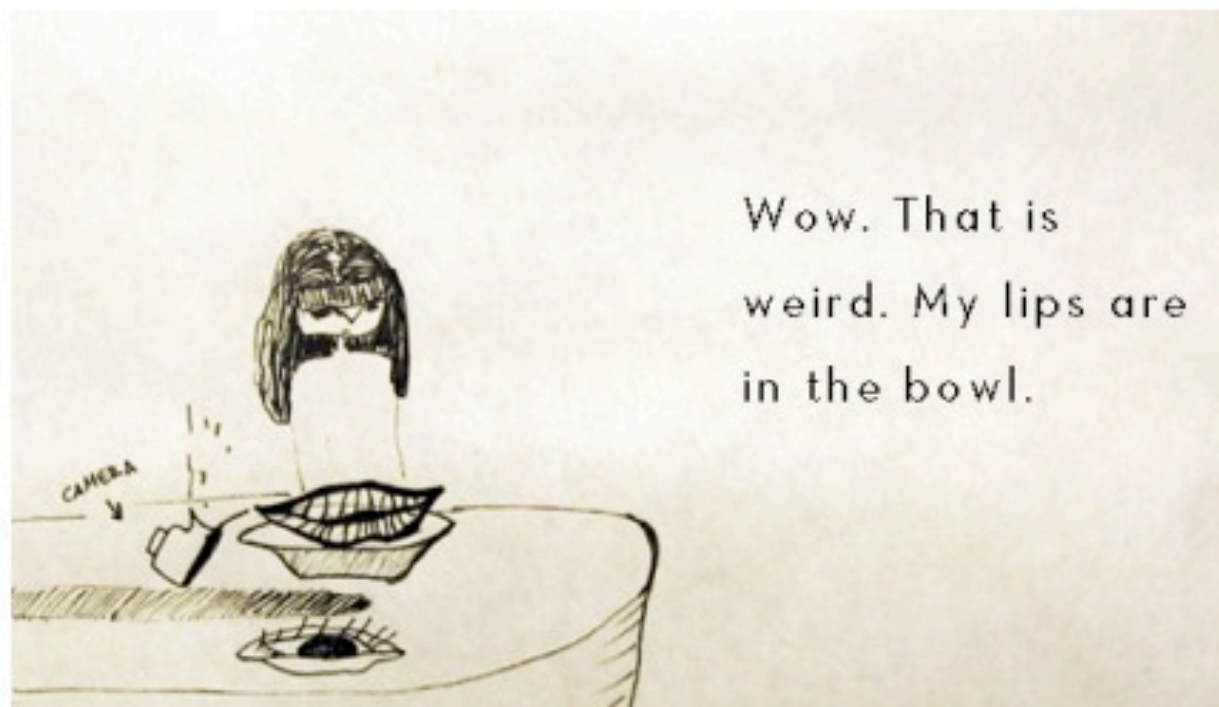
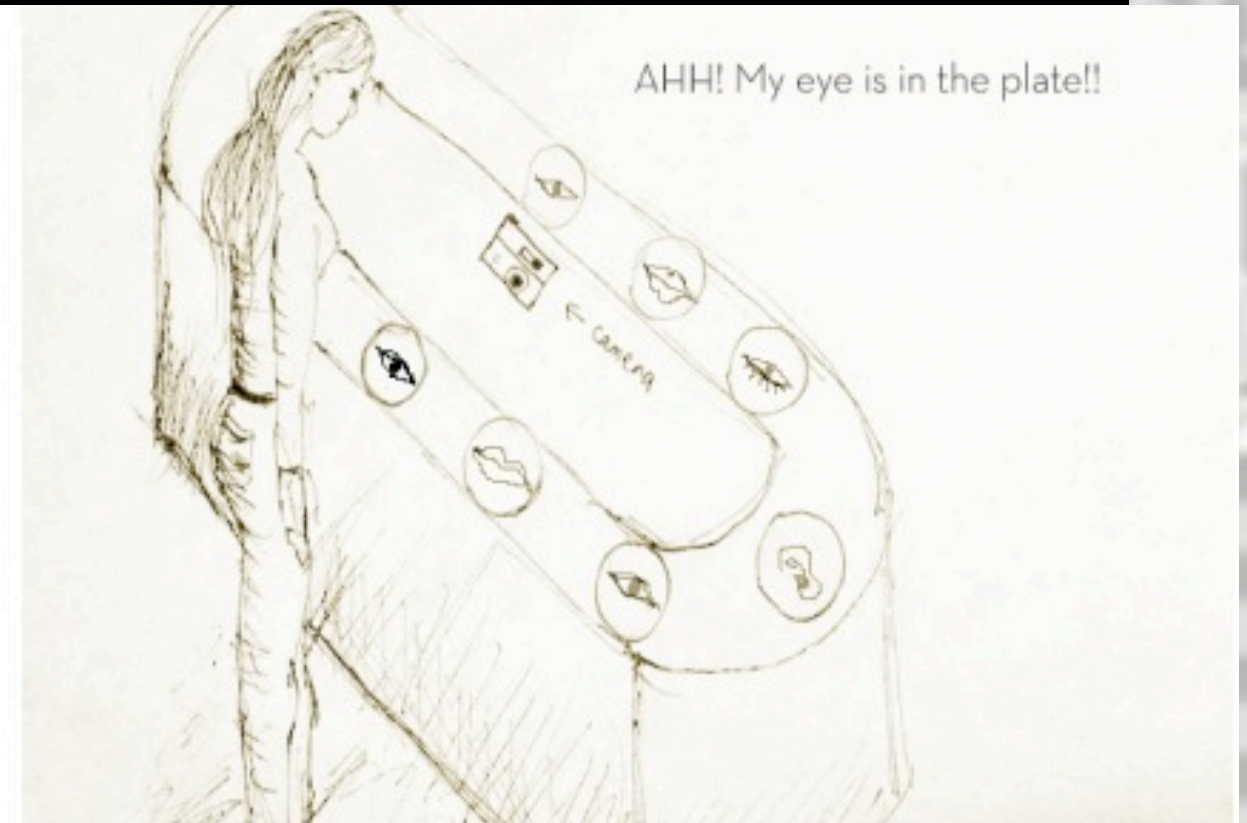
Sketch, write, draw, wireframe, storyboard

Go outside & document

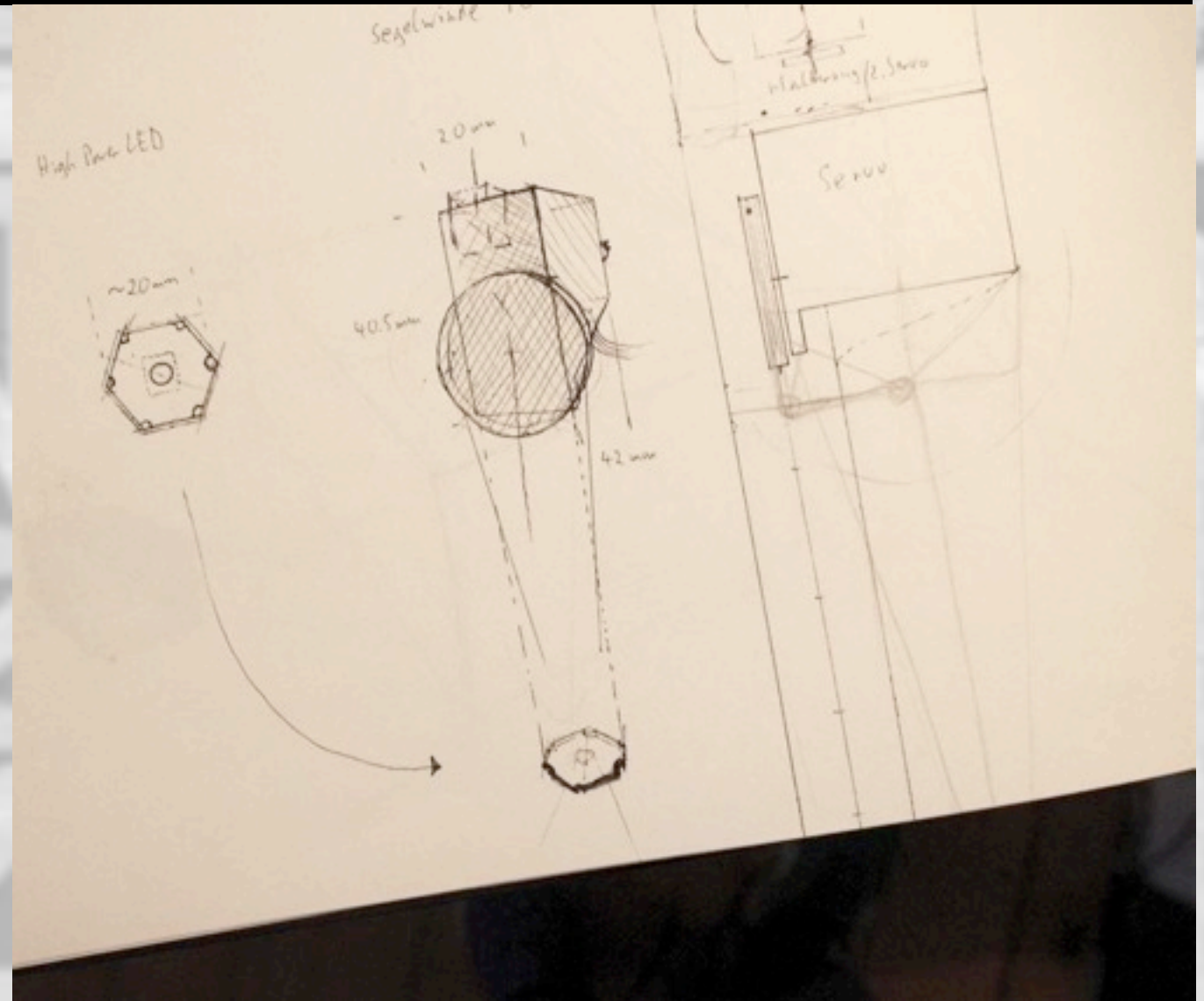
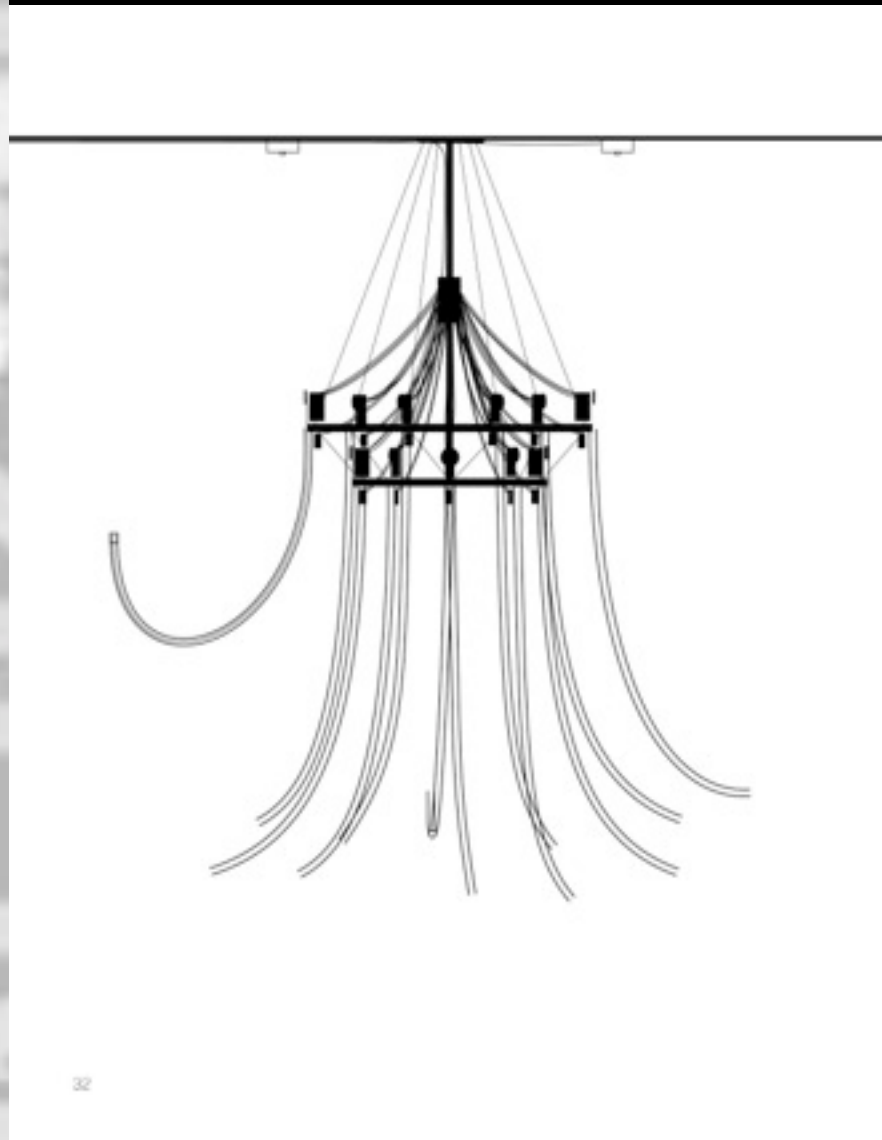
Interview people

STORYBOARD

Storyboard



3D RENDER



Mood board



EMPATHY RESEARCH

1. Define the user, interface, and feedback loop. What biological processes are mimicked?

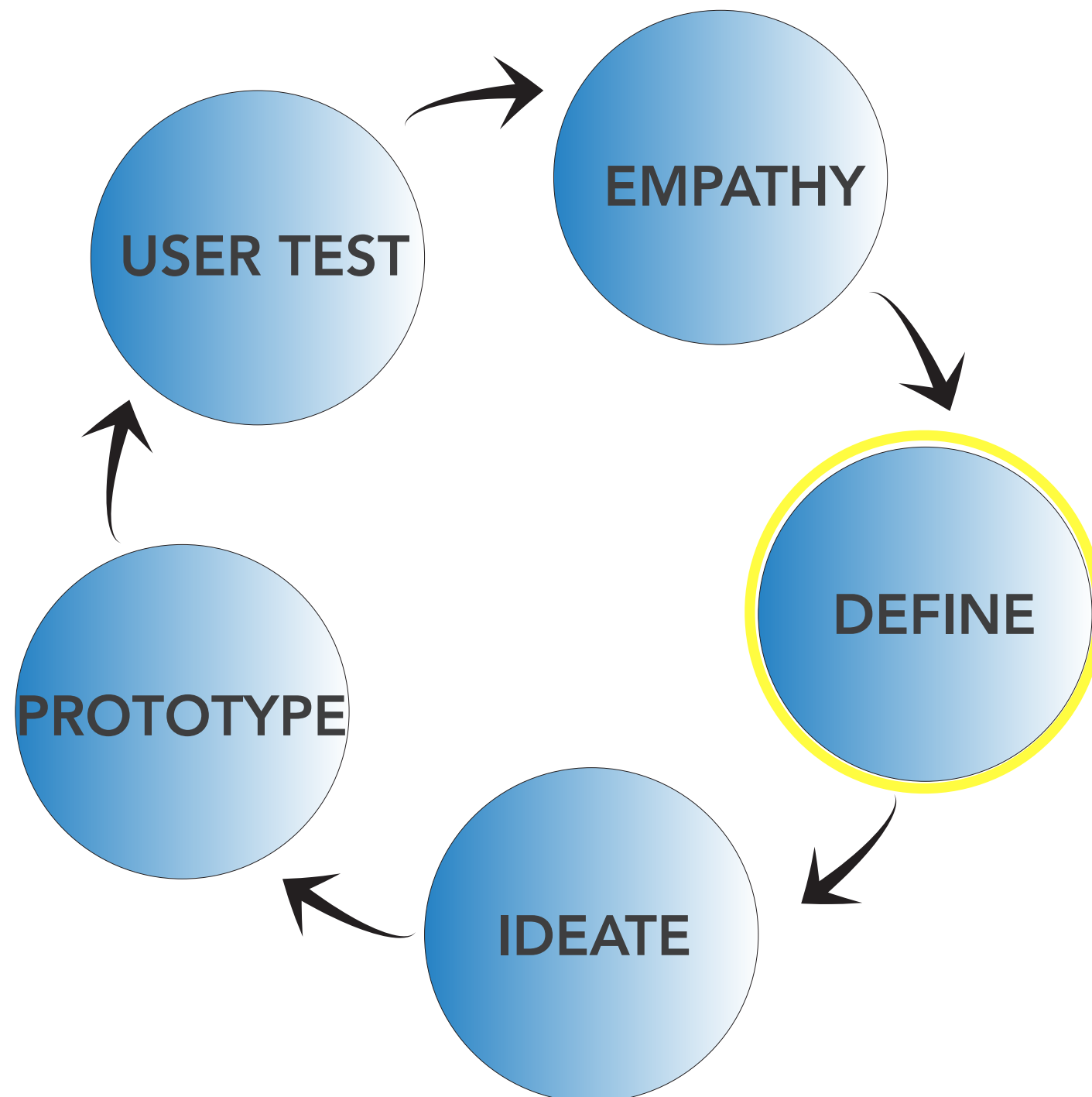
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3. What is the input and outputs?

4. How will you research the user as fast as possible? What or Who will you observe and engage?

6. WHAT IS YOUR RESEARCH PLAN?

DEFINE





POV STATEMENT

USER

NEEDS

INSIGHTS

POV STATEMENT

User [_____] needs a way

to [_____]

because [_____]

POV STATEMENT

Impatient Sam needs a way to shorten his time spent waiting on hold while calling the bank, and creatively, he has come up with a solution to do manual work while waiting on hold, using his new hands-free telephone headset.

Messy Mary needs a way to get rid of junk newspapers in her house, but has learned a way to repurpose old magazines into collage artwork and now has a cool new hobby.

HUDDLE

TEAM NAME

HIGH | LOW

User we
care about

meaningful need

unexpected
solution

wow factor

	X
X	
X	
X	

IDEATE

1
YEAR
2014

2
YEAR
2015

3
YEARS
2016

4
YEARS
2017

SUPER
COOL
JAILINK

OCEAN
DATA
RADIOACTIVITY
CORAL REEF
PLASTIC

OCEAN
CLEANUP

OIL CLEAN

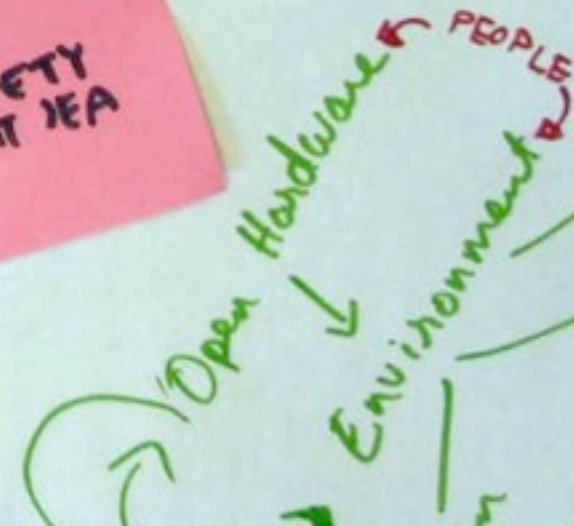
90%
WORLD
TRADE
CARGO

FRENCH FLEET
SAILORS

RESEARCH

FUNDING
LOCAL
GROUPS

SAFETY
AT IEA



PROTOTYPE



HUDDLE

TEAM NAME

NEED YOU'RE
SOLVING

PROTOTYPES
YOU TESTED

WHAT YOU
LEARNED

TITLE & ELEVATOR PITCH

What is your piece called?

1 sentence description
including what is the concept
and inspiration.

WHO WHAT WHERE WHEN WHY?
CONCEPT, CONTEXT, CONTENT

IDEATE

Sketch

Generate alternatives to test

Be concise and specific

IDEATE

Sketch

Generate alternatives to test

Be concise and specific

IDEATE

Sketch

Generate alternatives to test

Be concise and specific

IDEATE

A close-up, slightly blurred photograph of a person's hands holding a smartphone. The person is wearing a blue and white striped shirt. The phone is held in a way that the screen is facing the camera. Overlaid on the image in a large, white, handwritten-style font are the words "capture" and "everything" stacked vertically. The background is dark and out of focus.

CHOOSE 3



SAFE
BET



LONG
SHOT



MOST
MEANINGFUL

CHOOSE 3



SAFE
BET

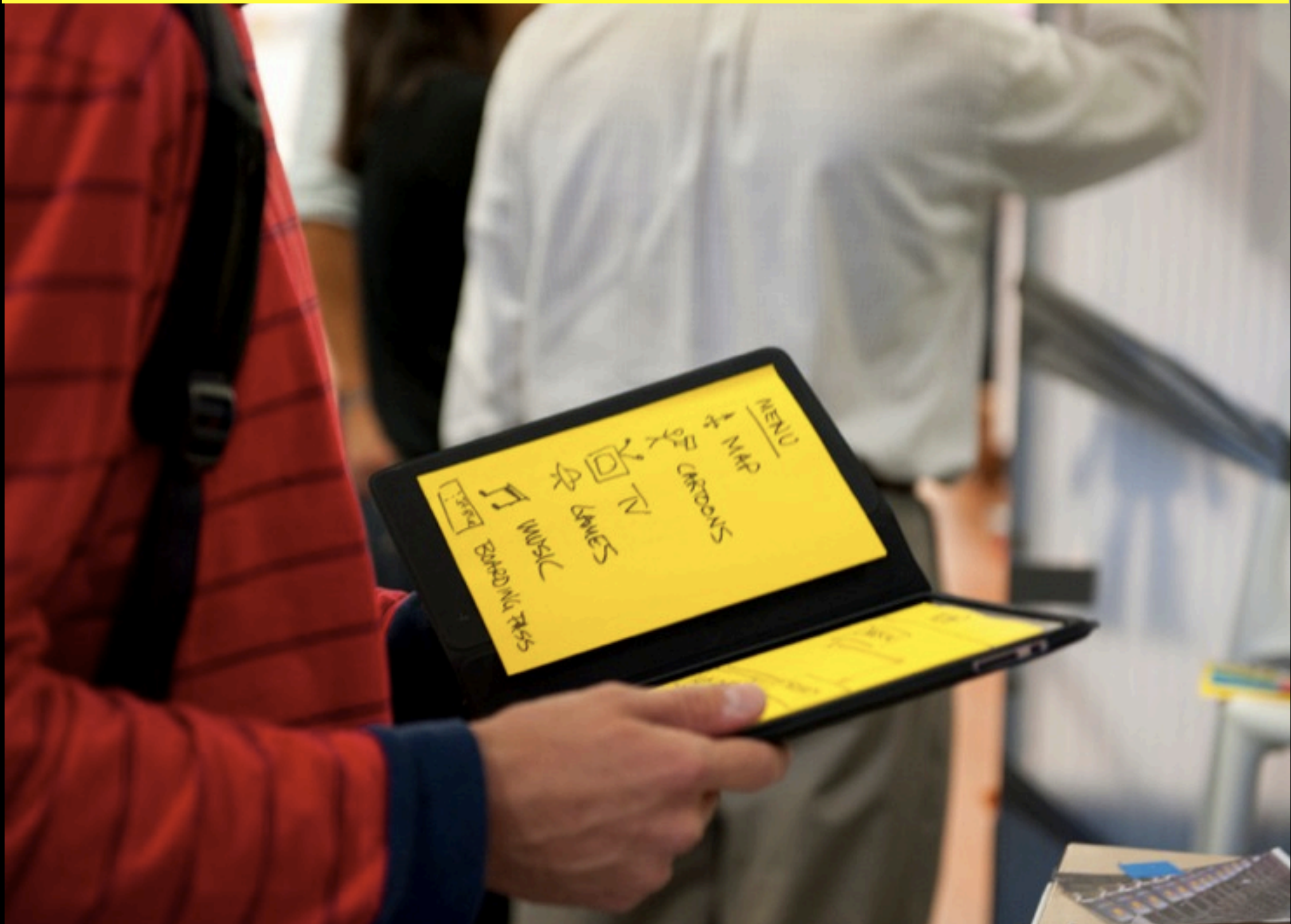


LONG
SHOT



MOST
MEANINGFUL

PROTOTYPE



BY TOMORROW 3:30

1. Prototype your ideas [use paper, keep it low res, analog]

2. Come up with a title for your project

2. Prepare the presentation

REACTIVE VERTEBRAE



Systems that mimic animal vertebrates:
<http://olliepalmer.com/reactive-vertebrae/>

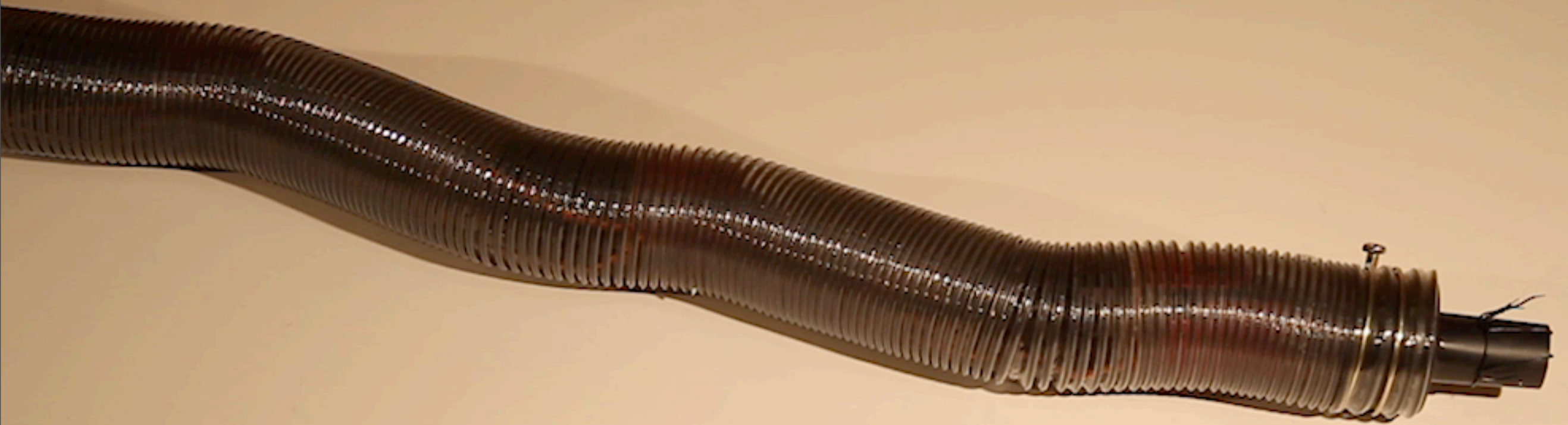
CLOACA

*Modeling the digestive system
and producing feces*



SNEEL

Biomimetic swimming snake robot



SNEEL

Biomimetic swimming snake robot



HOME APPLICATIONS

iRobot's ROOMBA vacuum cleaner



HOME APPLICATIONS

iRobot's ROOMBA vacuum cleaner

ANDREA

A living air filter



NEIL HARRISSON

Augmented ability through a sonic eye



CHOOSE 3



SAFE
BET



LONG
SHOT



MOST
MEANINGFUL

PROTOTYPE



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HUDDLE

TEAM NAME

NEED YOU'RE
SOLVING

PROTOTYPES
YOU TESTED

WHAT YOU
LEARNED