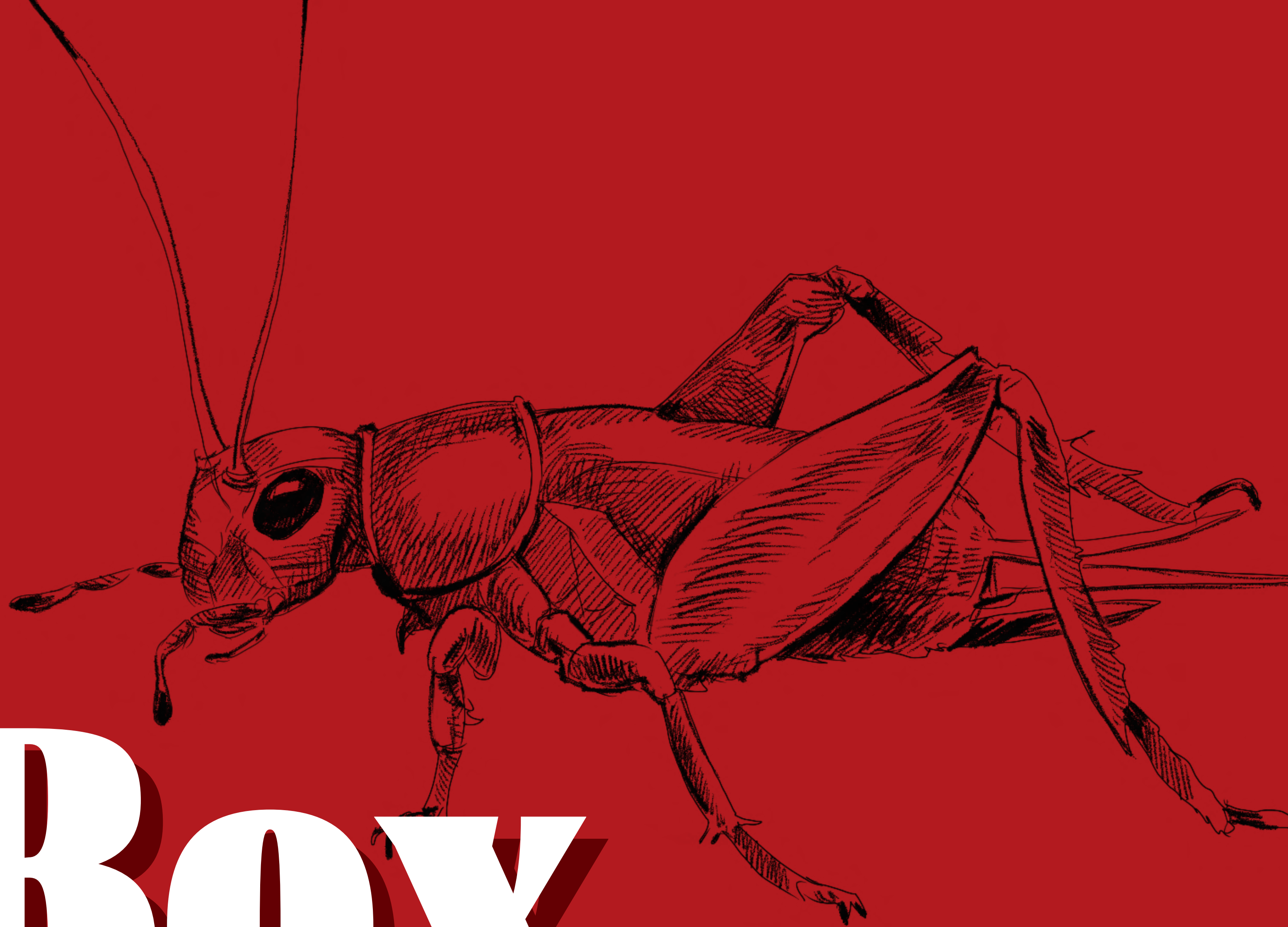


HCDE 598 Service Design

Sean, Honson, Quilla, & Brayan
Autum 2021



BugBox

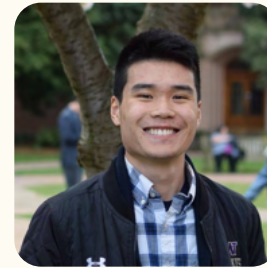
BUGBOX TEAM

Meet the Team



Quilla Valdez Graves

Content Strategist
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Honson Ling

UX Researcher
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Sean Horita

Industrial Designer
skh99@uw.edu



Brayan Zavala

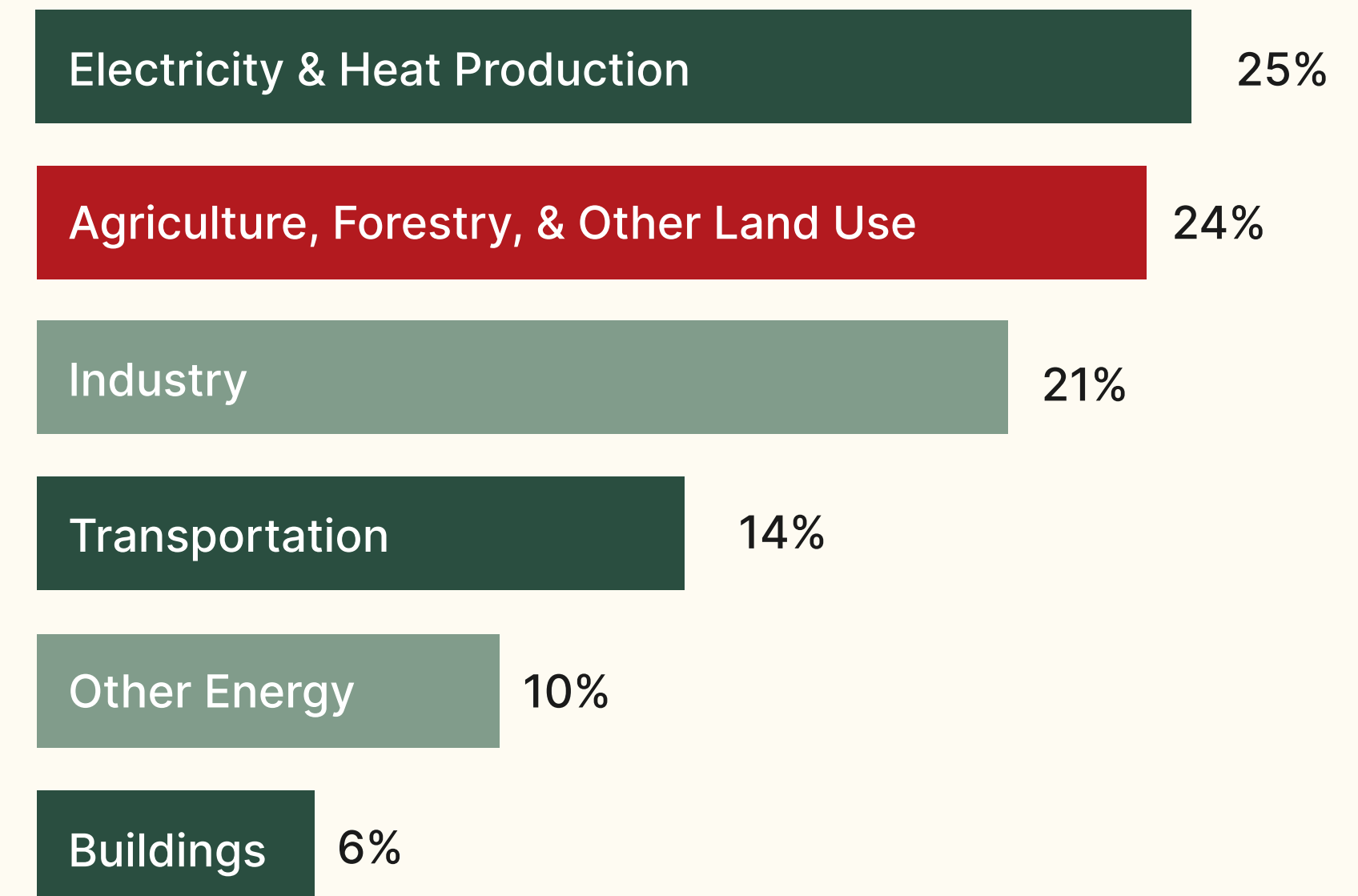
UX Designer
zavalab@uw.edu

OUR PROBLEM

A Pressing Need for Novel Proteins

While animal derived proteins provide great benefits to the human diet, the cultivation of crops, livestock, and deforestation resulted in **24% of global GHG emissions** in 2010. Today, it's demand has only grown. Agriculture must reduce its effects on global warming as the demand for animal protein has only increased.

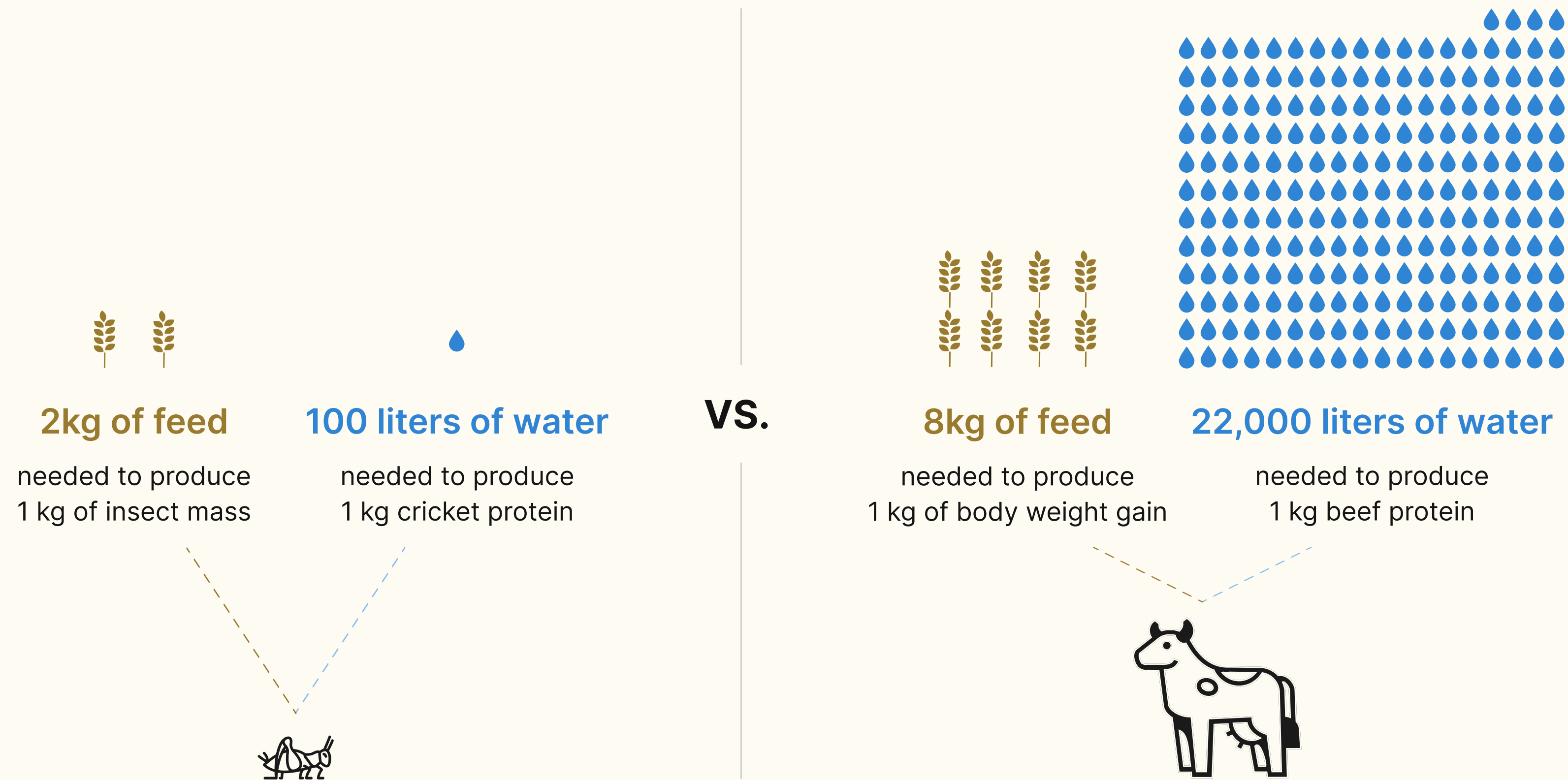
Our service design project explores possible solutions in **entomophagy** - the eating of insects.



Global Green House Emissions by Economic Sector

2010 numbers for Agriculture, Forestry, Land Use
<https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

OUR OPPORTUNITY



Insect based proteins are *far more* sustainable than animal based proteins.

Food and Agriculture Organization of the United Nations
<https://www.fao.org/3/i3264e/i3264e00.pdf>

Climate change
really bugs us.

OUR VALUE STATEMENT

We value *resilience, sustainability, community, & trust* in the design of services that promote novel forms of human nourishment.

RESILIENCE

Today's food supply chains are vulnerable and volatile.

Together, we have an opportunity to cultivate new reliable food sources that can adapt and scale to nourish the future needs of our community.

Robustness - COVID-19 disruptions exposed major vulnerabilities in the US food supply chain, specifically over-centralization and consolidation (4 companies processing 85% of all US cattle). These emerging concerns have led to new government investments focused on improving regional food supply chains.

Standards - How can we anticipate and adapt to future agriculture policies? Will livestock protein become an expensive luxury? Will bug proteins become everyday staples? What environmental targets will need to be met to ensure viability?

Scale - Current global supply chains are massive, complex, and interdependent. Positioning food production closer to local communities drastically lowers operational costs and environmental toll, while bolstering food security.

SUSTAINABILITY

Raising livestock is resource intensive and damaging to the environment.

- consumes arable land & water
- destroys carbon 'sinks'
- produces toxic GHG emissions

Our mission is to produce *more nourishment*, with *less resources*.

Conscience - Food consumers are already primed to value differentiators like “organic” and “free-range”. How can we distill complex information into meaningful insights that help our community learn and take action? “per 100 gallons of water consumption, you can get 71 grams of protein from crickets, or only 6 grams from a cow”

Minimizing Waste - Food waste in the US is estimated at between 30% - 40% of the food supply (USDA). Most consumers are not ready to completely sacrifice convenience for sustainability, so reductions in food waste and packaging are key to reducing environmental footprint.

Clear Accounting - For sustainability to grow in influence as a key performance indicator, we need clear tracking of GHG emissions. Consumers already compare CO2 impact for airline trips and may soon demand similar disclosures for food production.

COMMUNITY

For our service to be successful, we want to start small, local, and aspirational. A community of like-minded edible insect enthusiasts will generate interest and momentum, and embrace and encourage new members.

New values may emerge from emergent communities, supporting both producers and eaters.

Dependable - Even when disrupted by the unprecedented events of 2020, ad hoc communities formed to innovate and meet member needs. Communities effectively promote access to materials and information out of their own self-interest.

Committed - Eating bugs might seem unpleasant or unfathomable. Having advocates to serve as role models within a community can bring people together around worthwhile causes, and expand membership.

Producers - Today's supply chains are intricate and convoluted. Instead, local edible insect production can be transparent and efficient. We see value in forging meaningful connections between insect farmers and end consumers.

VALUES

TRUST

We want to move people from apprehension or revulsion, to *interest*, *enthusiasm*, and *advocacy*.

Part of this conversion could be derived from facts and statistics, but real commitment must come from meeting people and their unique tastes at their individual points of comfort.

Worth Eating - The USA, EU, and a coalition of countries in Asia each have established trade groups that promote entomophagy, research aspects of insect farming, and formulate policies and best practices to aid in developing this new industry. The insect protein market is projected to be worth around \$1.3B in 2025, having grown at roughly 30% YOY since 2015.

Good For You - Insects convert nutrients and water into protein far more efficiently than commonly consumed animals. Most species have more protein by weight than legumes; some contain more than meat and eggs. In addition to high protein content, crickets contain iron, calcium, and B12.

Established Traditions - 2B people around the world already eat bugs. People in the US may have seen or tried bugs when traveling abroad and learning about other cultures' cuisines. Cookbooks and increased awareness through many channels helps to normalize gourmet entomophagy, but we recognize many people will want to take baby steps on the road to commitment, and we want to support their nourishment needs.

Research and Discovery



BugBox

SERVICE GOAL

Becoming a BugEater

At BugBox, our goal is to create a **meal delivery service** that evangelizes edible insects as a staple ingredient in the daily meals of our community.

In the adoption phase, it will take some ingenious marketing and adventurous foodies to try our products.

Our goal is to **normalize edible insects** through a community of *BugEaters*!



User Research Methods

Survey

Questionnaire on attitudes and behaviors associated with edible insects (n=25).

Co-Design

Co-design with participants a communal dinner with edible insects through a series of activities (n=5).

Narrative Prototype

Role play a scenario where customers are introduced to BugBox through food sampling at a local grocery market.

METHODS

Edible Bug Survey

In our discovery phase, we leveraged the speed and efficiency of the **survey method** to gather insights from **25 participants** on consumer attitudes and experience with edible insects.

WHAT WE LEARNED

Word-of-Mouth matters - Word-of-mouth strategy, such as recommendation through friends and family, as well as through online platform, such as Instagram, Yelp, or Google are crucial in changing food consumption behavior.

Lack of familiarity creates fear - While people who have tried insects generally enjoyed their experience, people who haven't tried insects expressed great fear due to their assumptions about its poor texture and taste.

Health & Safety was a big concern - Participants would like more confidence or transparency into the process of preparing the bugs.

METHODS

Co-Design

We led an online **co-design workshop** with **5 participants** consisting of various activities, such as food image web search, value discussion, and a create-our-own communal-insect-meal activity.



WHAT WE LEARNED

Education & reflection changes attitudes- Most participants had a strong aversion to the idea of eating bugs at first. Once they saw and reflected on the different ways to consume them throughout the session, they seemed way more willing to try them by the end.

Hide the bugs! - Most participants would not like to see or visually know that they are eating bugs. Nor would they like to be reminded of that in the packaging. Using a powdered or 'flour' format could present opportunities to alter or innovate on bug food form.

Climate catastrophe effects is powerful- Even though some participants mentioned that there are other ways to be green or to eat protein, when given the scenario that meat would be more expensive to produce, they understood and agreed that this new form of protein could be more a more viable option for them.

Nutritional value & health benefits also sells - When presented with some of the nutritional facts and health benefits, participants expressed that they were more compelled to try them and consider it as a regular source of protein.

METHODS

Co-Design Activites

Brainstorm Foods

Example:
Your
favorite
place

Your
favorite
Snack

Your
favorite
Drink

Your
favorite
Veggie

Your
favorite
Carb

Your
favorite
Protein

P1













P2













P3













Discuss Values

What is your first impression when you hear about eating edible insects? (3 min)

P1

I've done this before and it feels like the future

The cricket chips I had were pretty good

I accidentally ate a bug yesterday on a run and it was pretty gross when the bug was like a full bug

The cricket chips were savory and salty

I've heard bugs are a more sustainable resource to make food from.

I think in order for this to be successful the bugs have to not look like or retain the texture of bugs.

P2

never done it before

It would heavily depend on the seasoning and the way to cook it

as long as I don't have an image of a full insect in my mind I will be totally open to it

I am intrigued by the concept and would like to try

I want to know how it's being handled

P3

Why would anyone ever want to eat insects

Look terrifying (either the food itself, packaging)

the imagination of the shape and the texture of the bugs in mouth are terrifying

What values matter for you in eating edible insects? (3 min)

P1

Sustainable food production

Health

P2

if it helps with sustainability

if it helps with food access in general

nutritional values

P3

nutritious

Communal Meal Ideation

Pasta made out of insect flour





Dessert









insect flour in cookies

red beetle dye in a dessert

Something soaking in a sauce to hide the bugs in









Garlic bread with bug seasoning







Sweet Realm

Protein Powder - Cricket Powder

Protein Pancake

Protein Oat





METHODS

Narrative Prototyping

Through role-playing how a salesperson sells **BugBox at a local Costco**, we explore how different consumers might react to our products.

Through this activity, we assigned ourselves the role of a **salesperson**, a **skeptical consumer**, and an interested soon-to-be **BugEater!**

WHAT WE LEARNED

People love the interpersonal relationship a salesperson can make -

By having a spokesperson to explain and demonstrate the value of our product, others find this way of selling really persuasive.

“The salesperson has to not only ‘sell’ the product, but the concept of eating bugs too”

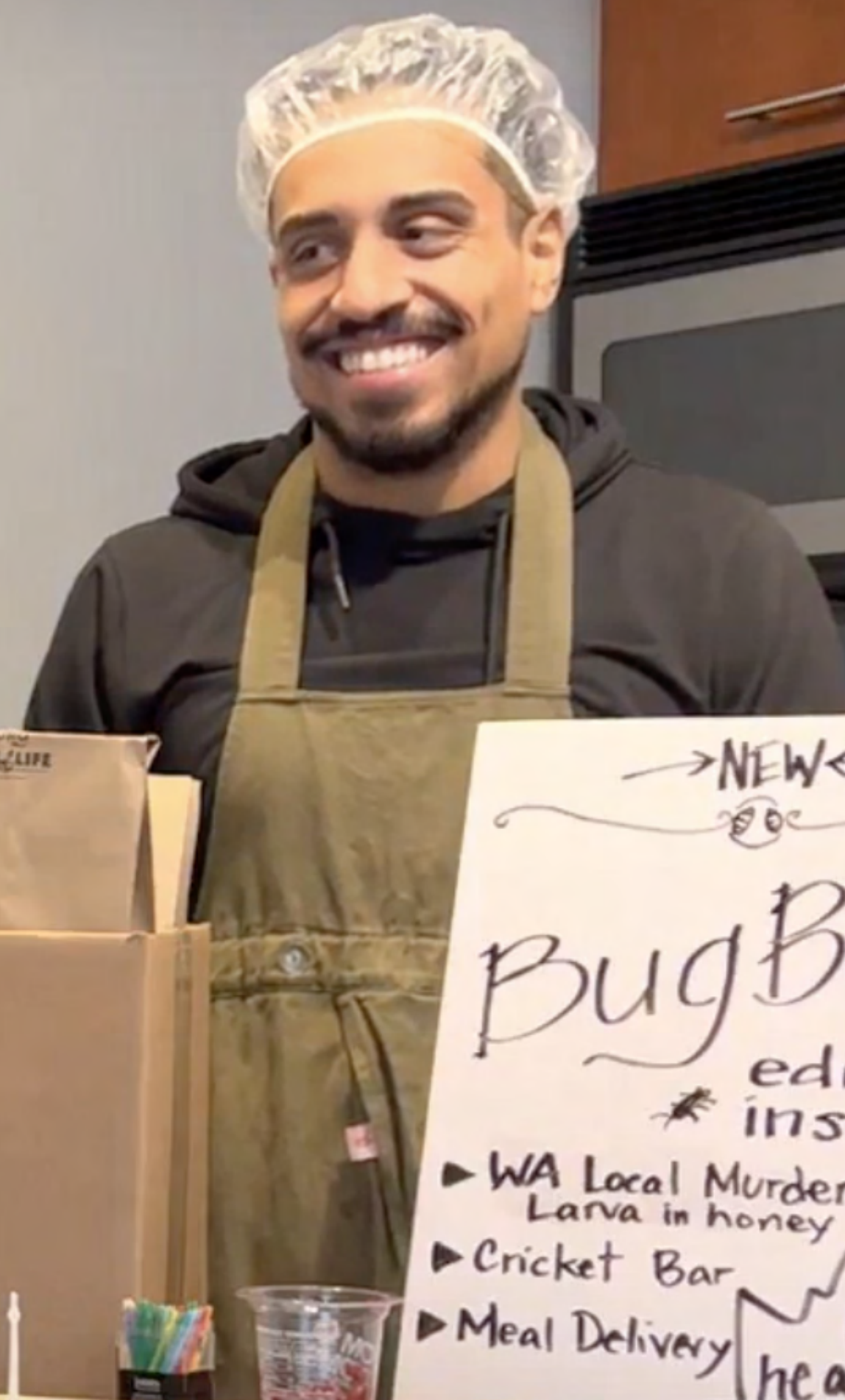
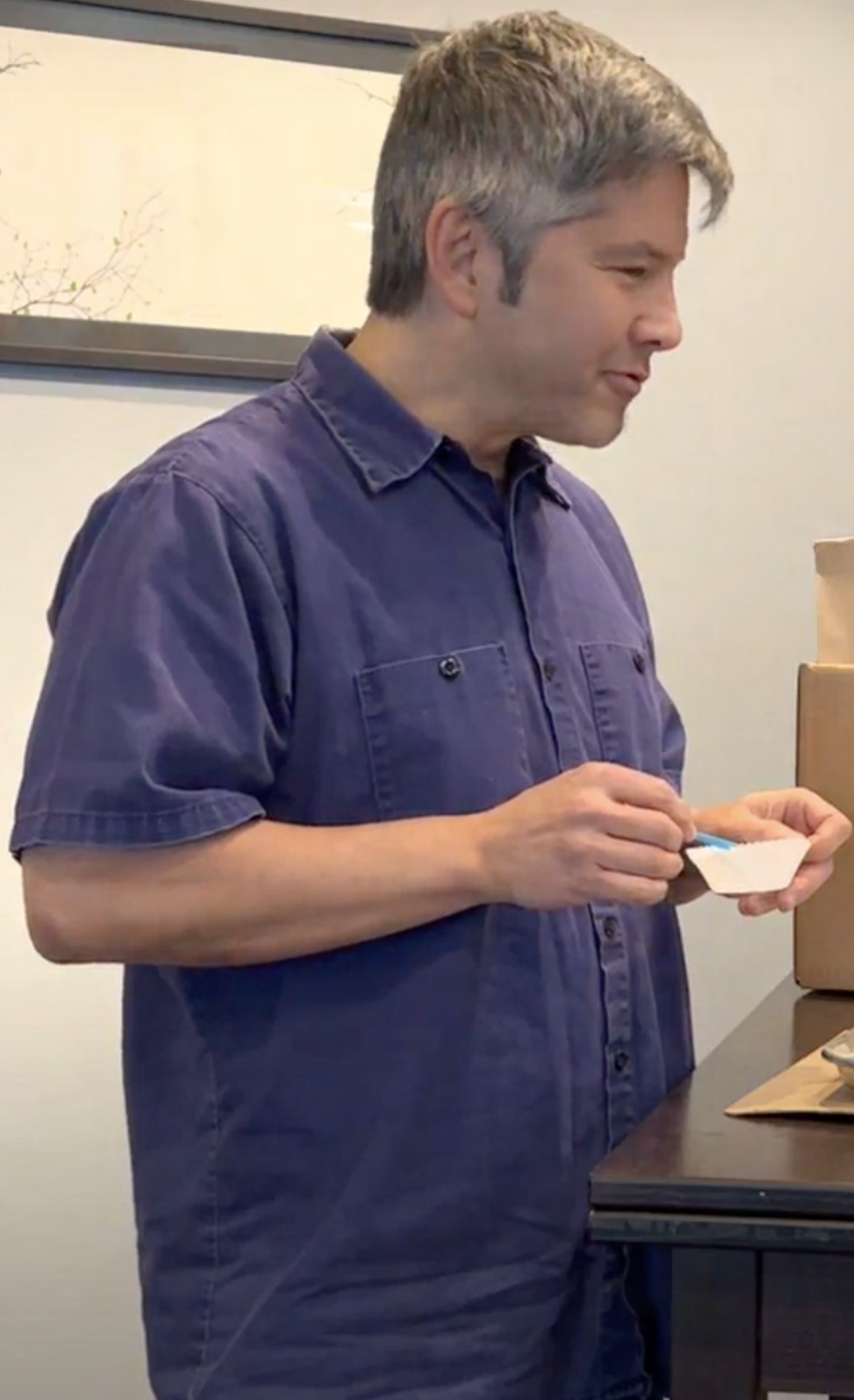
- Fellow design student

Rethink how customer discovers our product - Initially through our narrative prototype, we envisioned our customer finding our product through the sampling counter of Costco. By acting out our scenario and gathering feedback from other designers, we realized that this might not be the only entry point for potential customers to subscribe to our product.

Through narrative prototyping, we found that the branding of a grocery chain also matters. Furthermore, we might also explore other avenues such as local farmer markets and social media platforms.

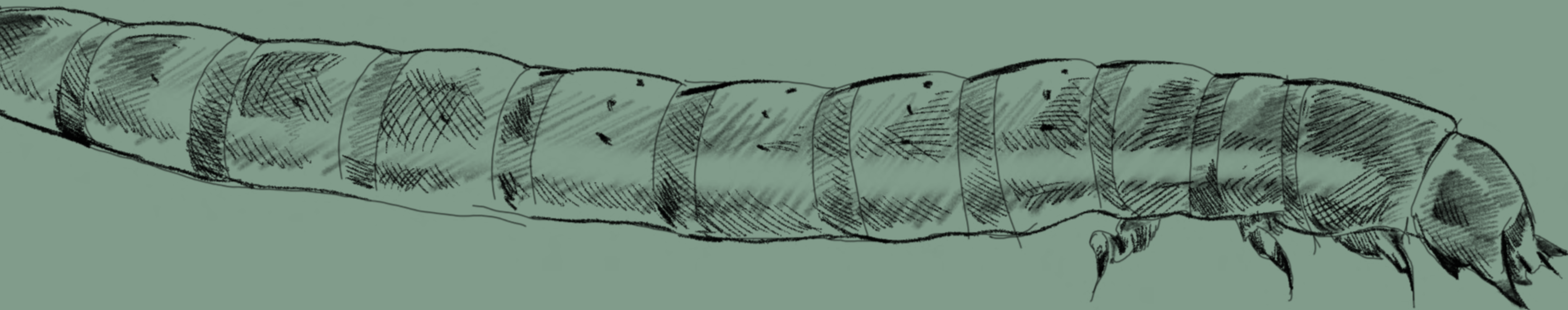
“I could see this interaction happening more at a Whole Foods or PCC instead of a Costco though, maybe because Costco always seems very frenzied and cold to me because of the warehouse-y vibes.”

- Fellow design student



NEW
BugBox
edible
insects
► WA Local Murder Hornet
Larva in honey
► Cricket Bar
► Meal Delivery
it's
healthy!
(we promise)

Our Service Strategy



BugBox

Our Design Principles



Naturally Abundant

We are biophilic. We abide by the bounty of ecosystems. Our design choices proceed from nature, not from technology or ego. Visually wholesome and earnest.

Abundance and **richness**, not scarcity, not doom or guilt.



Change & Growth

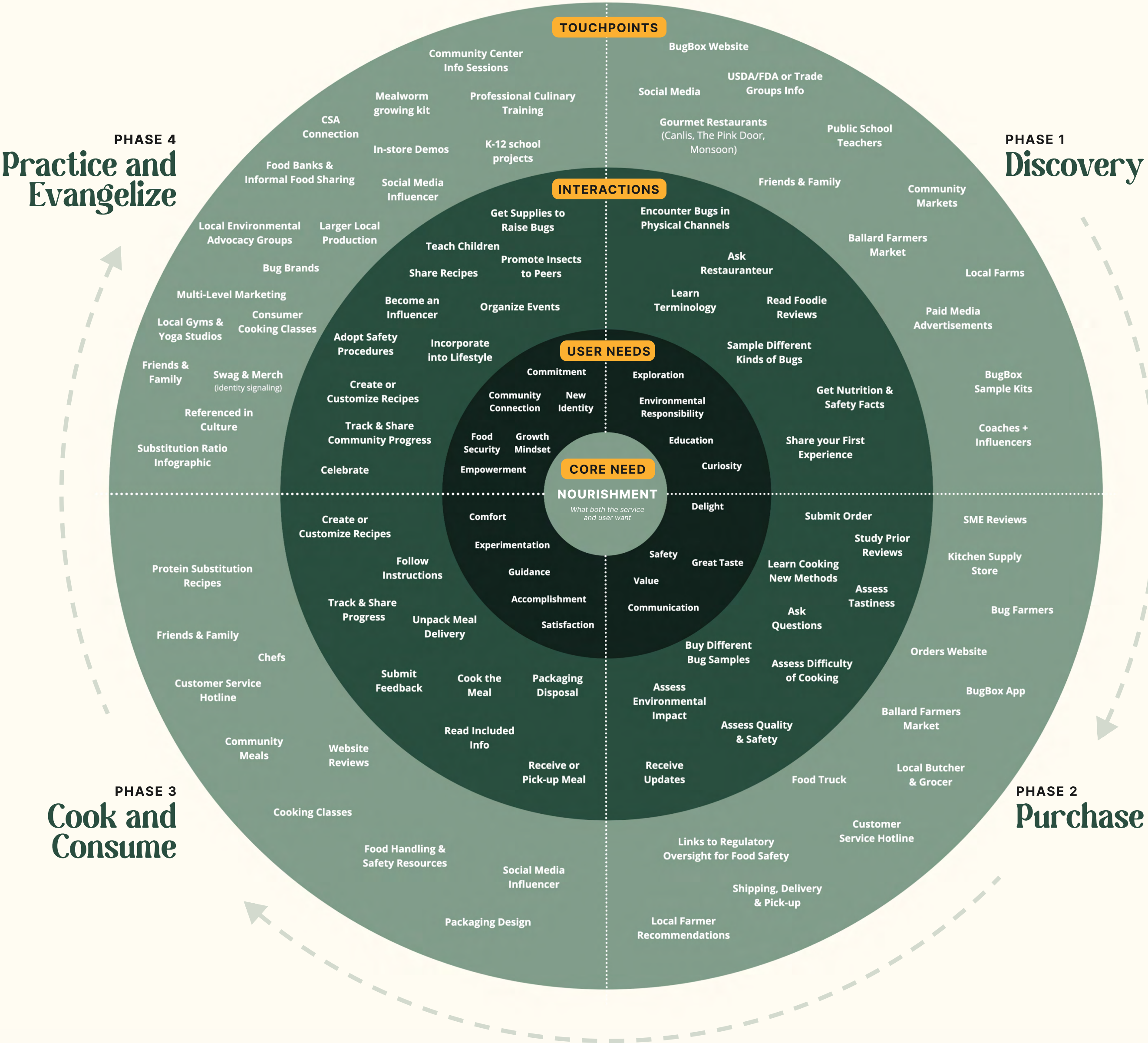
We will meet you where you are in this new food adventure. You are part of this movement with deep affinities for helping the planet, and we'll be together in this exploration.

"You can do this!"

How to Become a BugEater

This service ecosystem map is centered on the deep-seated need for human nourishment as a primary value.

In the context of consuming insects-as-food, the service is comprised of **four phases** which lead an eater through a process of becoming committed to entomophagy.



Meet Stephanie

Stephanie is a **34 year old Developer** living in **Ballard, Seattle, WA**. She is an avid cyclist and has been looking for new ways to **increase her protein** consumption for her winter training.

During one of her weekly trips to the **Ballard Farmer's Market**, she sees a compelling BugBox tent with a sign, saying that they sell bug-based proteins.

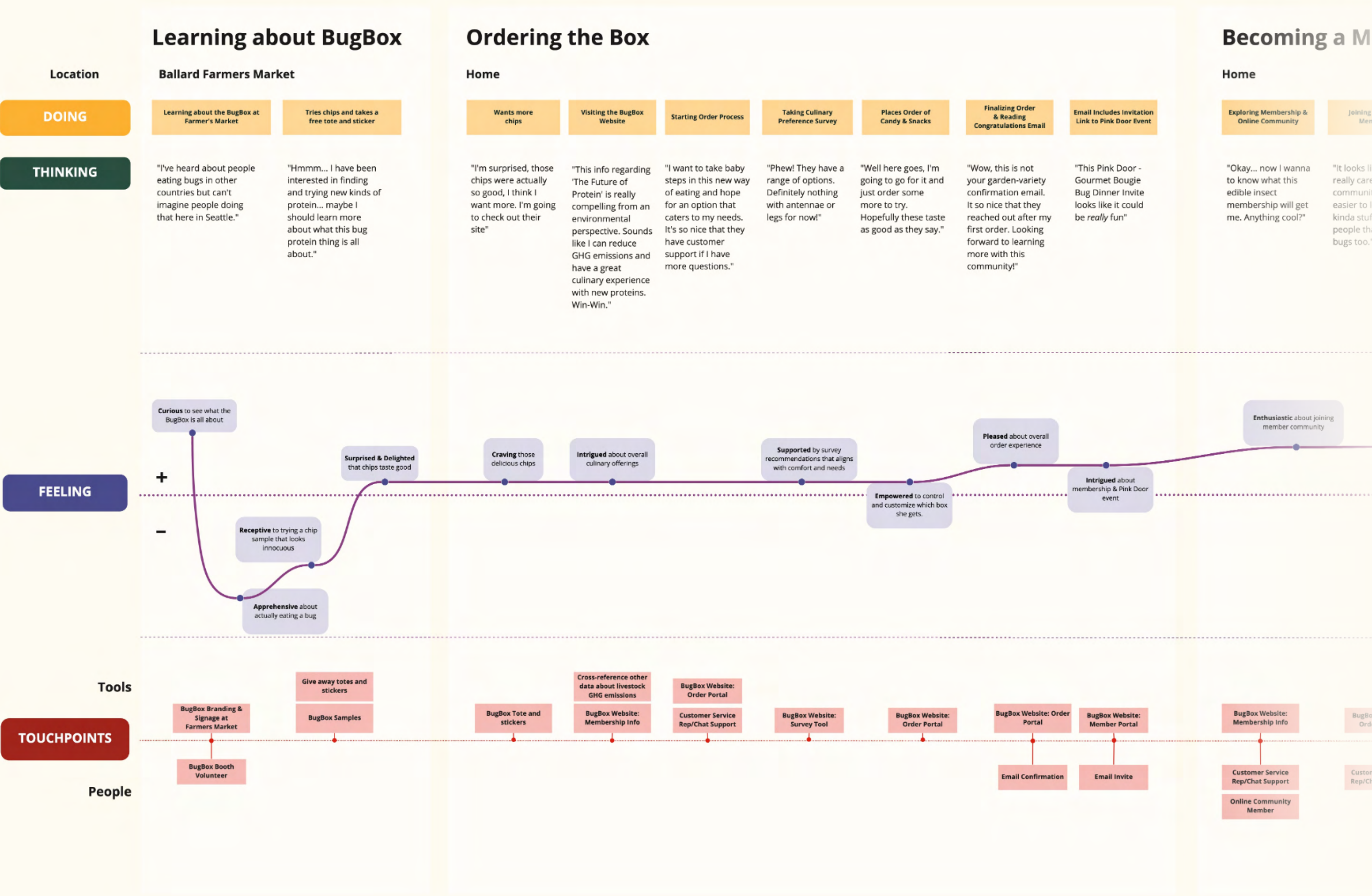


USER JOURNEY MAP

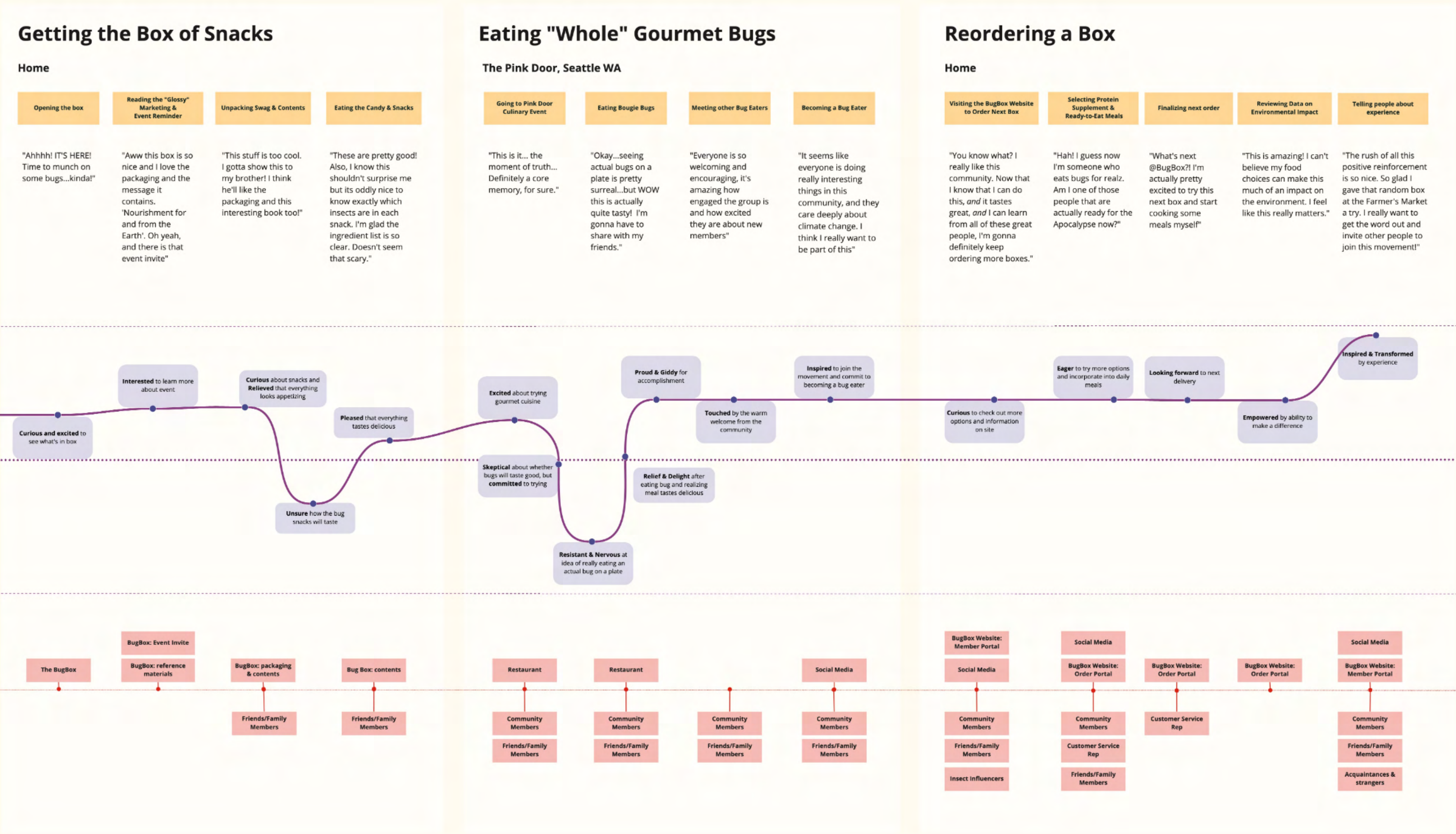
Journey Map

Steps in Stephanie’s Journey

- Learning about BugBox
- Ordering the Box
- Becoming a Member
- Getting Snacks
- Eating Whole Gourmet Bugs
- Reordering the Box



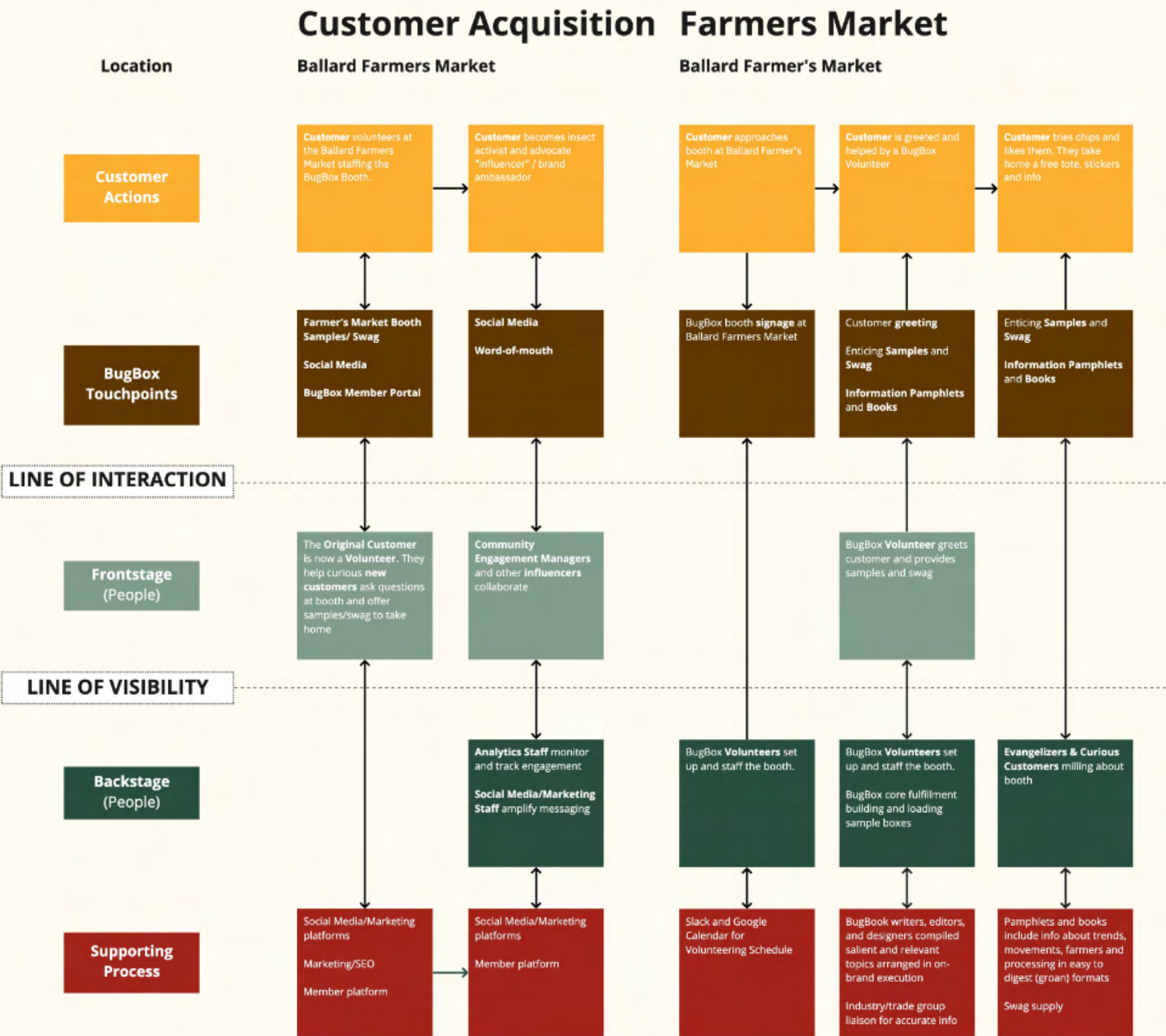
USER JOURNEY MAP - CONTINUED



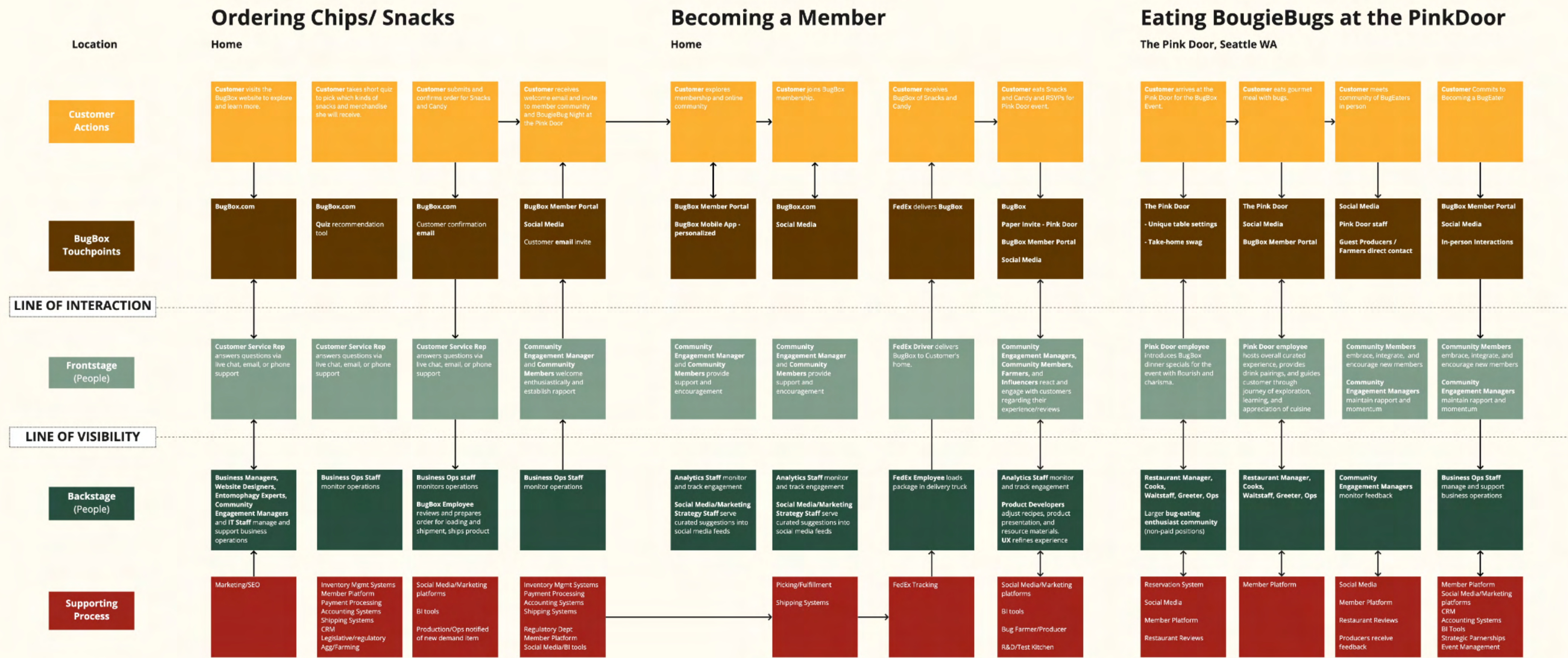
Service Blueprint

Phases of our Service Blueprint

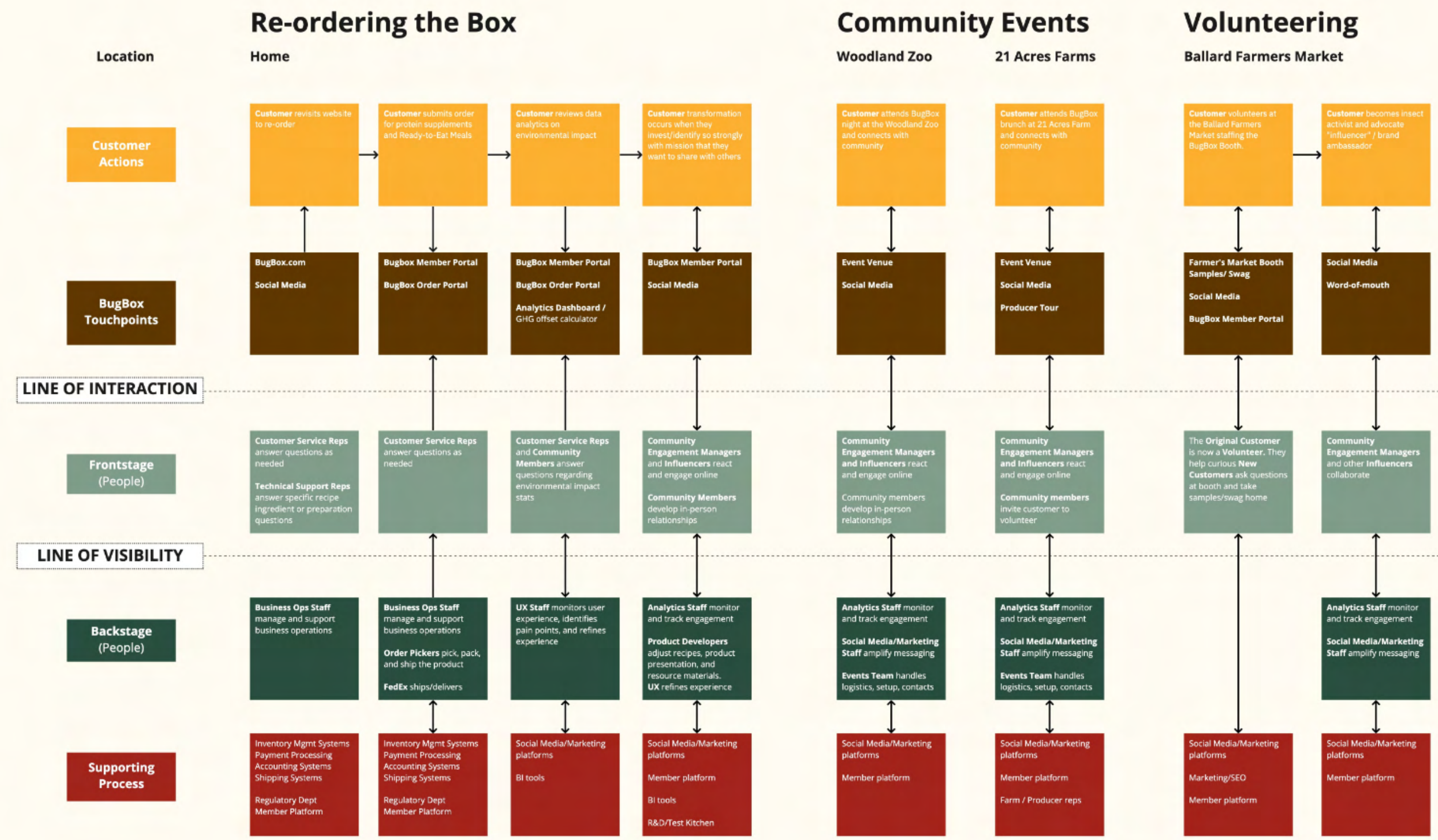
- Marketing Customer Aquisition
- Farmers Market
- Ordering Chips/Snacks
- Becoming a Member
- Eating Bugs at the Pink Door
- Reordering the Box
- Attending Community Events
- Volunteering for BugBox

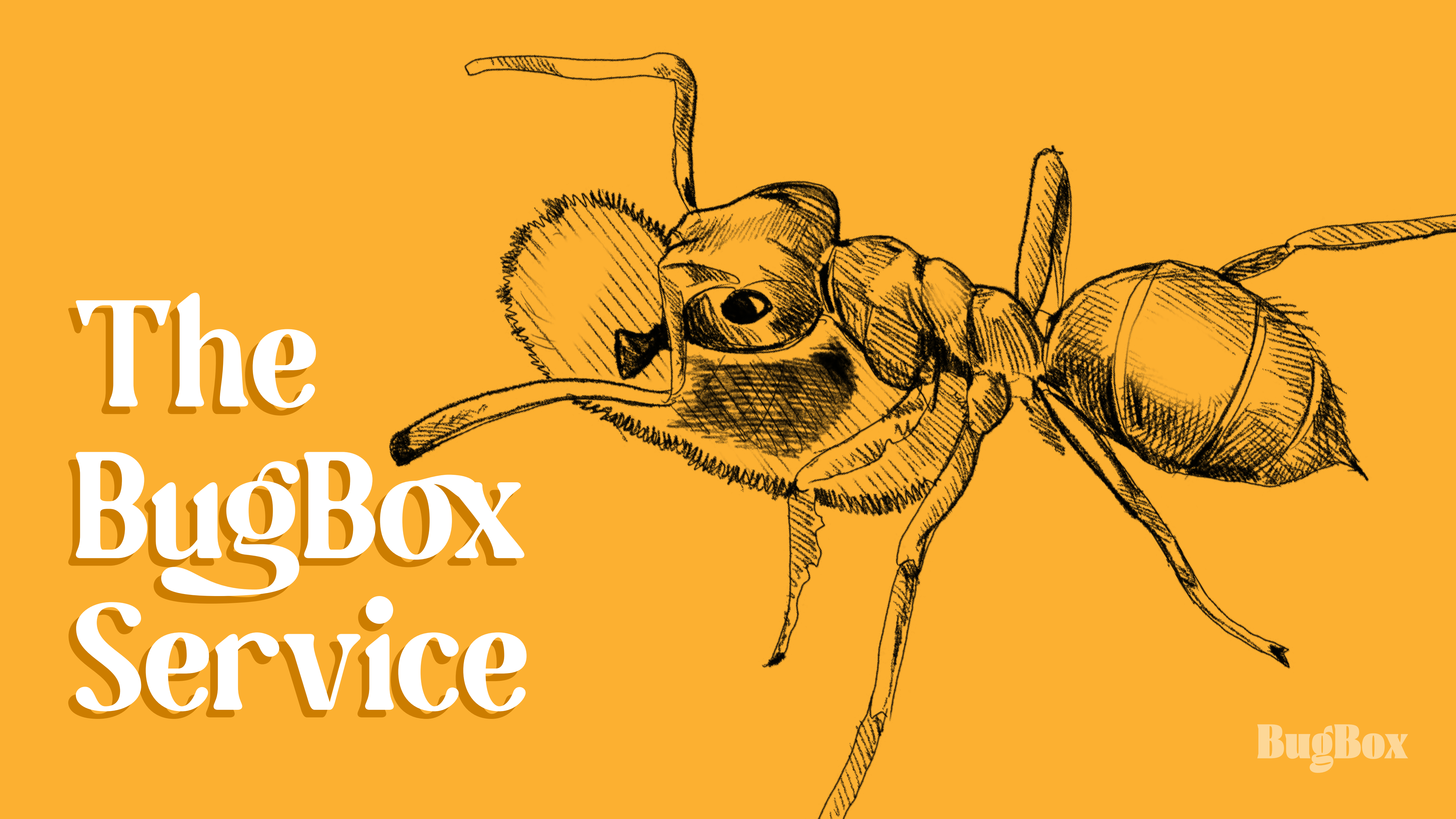


BUGBOX SERVICE BLUEPRINT - CONTINUED



BUGBOX SERVICE BLUEPRINT - CONTINUED

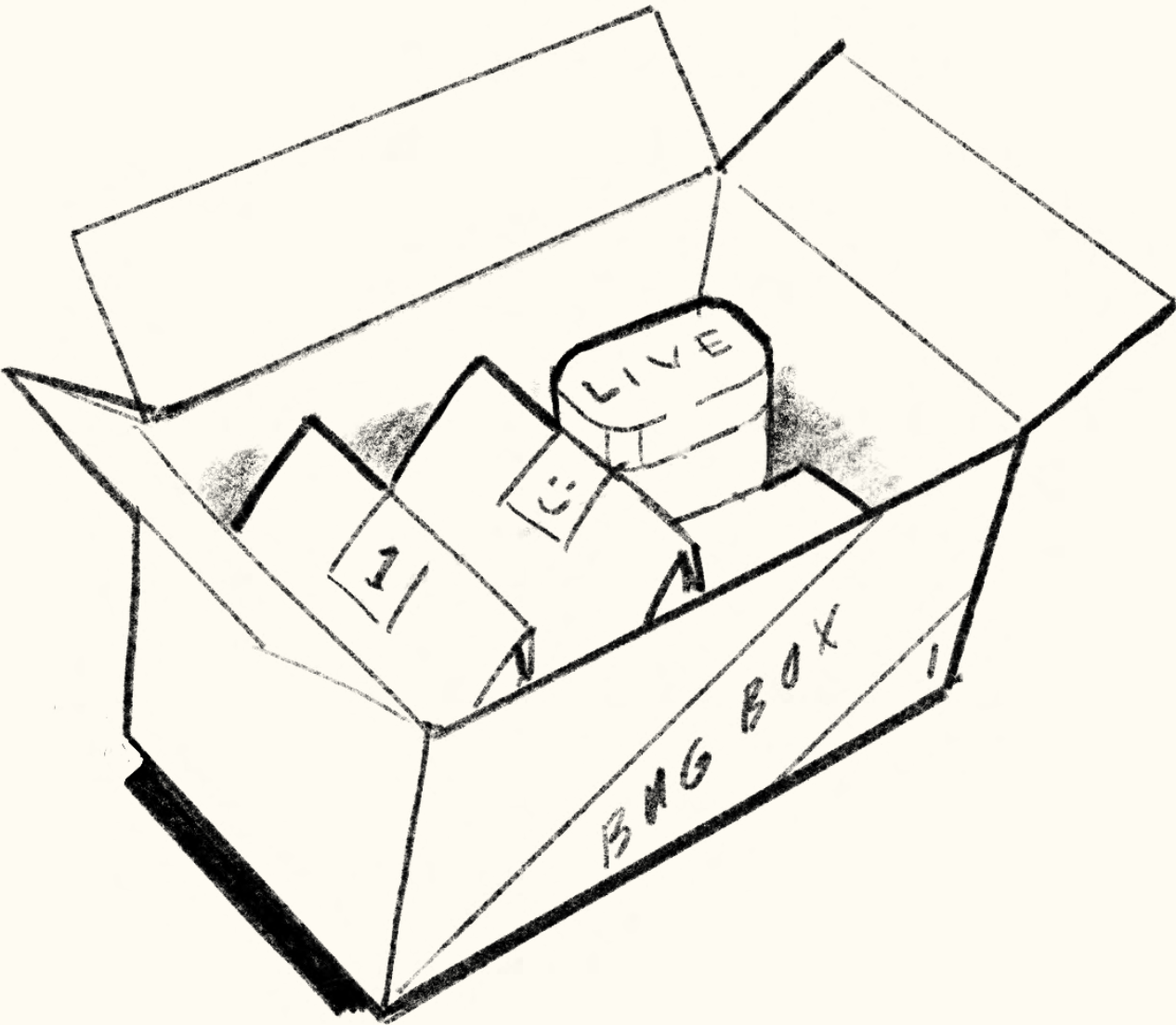




The BugBox Service

BugBox

How Adventurous are You?



“Not very much...”

“I’ll try it if it looks good.”

“I’ll try most things.”

“I’ll try anything.”

Snacks

Chips, Cookies,
Candy, and Savory
Snack Mixes

Proteins

Protein Powders,
Shakes, and Bars

Meal Delivery

Pre-Cooked Ready
to Eat Meals

Meal Kit

A kit with all the
ingredients you need
to cook a healthy,
bug-filled meal.

BUGBOX MEAL KIT






BUGBOX RECIPE CARDS



serving suggestion

Black Ant Guacamole
with Black Ant Salt and Chickpeas

For an innovative game day snack or savory hors d'oeuvres, we've harmonized the subtle flavors of black ant salt and succulent avocados in this delicious bowl, which also includes yucca Manchego, fried spiced chickpeas, and crispy grasshopper croquettes. Use it as a dip for veggies or Cricket Tortilla Chips. Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 15 minutes prep 5 minutes cook	 600 calories 22g carbohydrate 32g protein	 -1.5g CO2 +30 gal H2O -10g CH4


Check out these
special ingredients!



serving suggestion

Insect Tsukemen Ramen
with Peppers and Silkworm Flavor

Enjoy steaming, savory ramen bowls topped with dried seaweed and thinly sliced boiled eggs. This insect tsukemen is served with delectable spiced crickets atop mealworm-peppered noodles, swimming in a rich silkworm powder broth. Includes bowl of ramen paired with fried crunchy-worm spring rolls, and cricket infused rice. Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 20 minutes prep 15 minutes cook	 450 calories 42g carbohydrate 25g protein	 -2.9g CO2 +50 gal H2O -20g CH4

Check out these
special ingredients!



serving suggestion

Saucy Cricket Nachos
with Black Olives and Jalapenos

We've packed this version of nachos with an impressive load of toppings including our special cricket "meat", Cricket Tortilla Chips, refried beans, jalapenos, black olives, and onions. But you can top your nachos with whatever you want; we recommend guacamole, cotija cheese, and our spicy chapulines! Your ingredients are sourced within 150 km to reduce emissions, and all packaging is responsibly produced and recyclable.

total time	nutrition	impact
 20 minutes prep 15 minutes cook	 450 calories 42g carbohydrate 25g protein	 -2.9g CO2 +50 gal H2O -20g CH4

Check out these
special ingredients!



BUGBOX MEMEBERSHIP

Community Centered

Members get invites mailed in their BugBox

In-Person Events

We encourage the exploration of new experiences and cuisines through in-person events where new members can mingle and feel that they are part of a community of BugEaters.

Community Support

Through online forums and in-person support, members feel that they can cook and consume bugs in their own homes. With this support system they can change their behaviors and continue this new journey of eating bugs.



Bug farmers are available for any questions at the events



BugBox

Membership

Who Are We

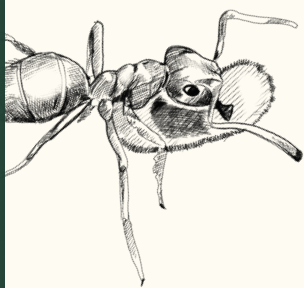
Sustainability

Community

Get Started

Climate change really bugs us.

JOIN OUR SEATTLE COMMUNITY



Insect Based Foods, Straight to Your Door



1

Choose delicious meals and extras

2

We deliver fresh each week or month

3

Ready-to-Heat or Cook from Scratch

4

Skip or cancel anytime

BugBox

Membership

Who Are We

Sustainability

Community

Get Started

A Community of BugEaters

Upcoming Community Events

Become a member to join us for these upcoming events! It's free to join!



7 FEB

Italian Cooking with Bugs

If you prepare insects well, they look good to eat – Mai Thitiwai

Learn the new techniques with your favorite italian cuisine.

VIEW EVENT DETAILS



20 MAR

Adopting New Eating Practices

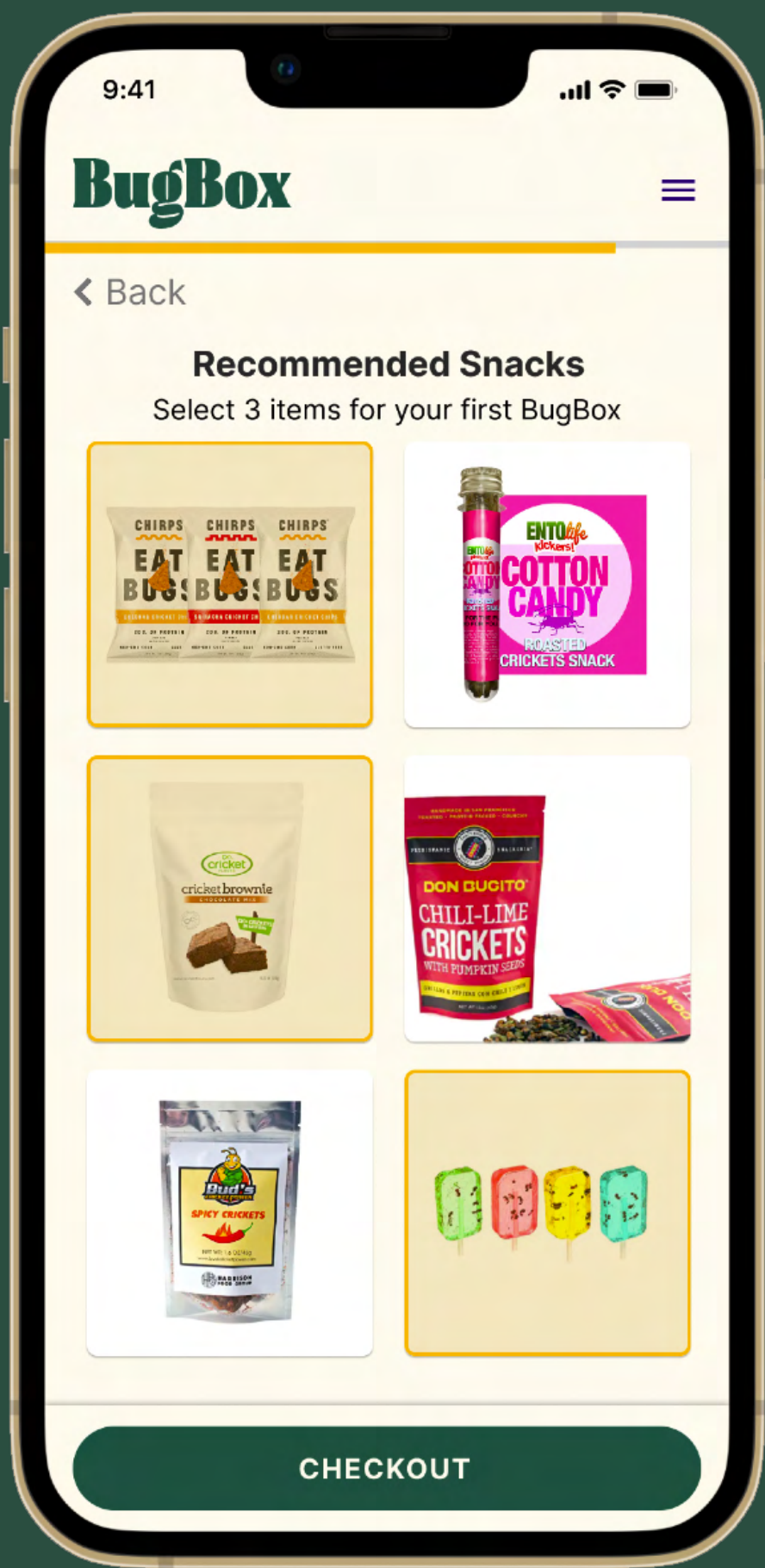
Eating bugs isn't a new thing, but why aren't more people doing it? Learn about the history of entomophagy.

VIEW EVENT DETAILS

BUGBOX.COM SIGN UP & CHECK OUT FLOW



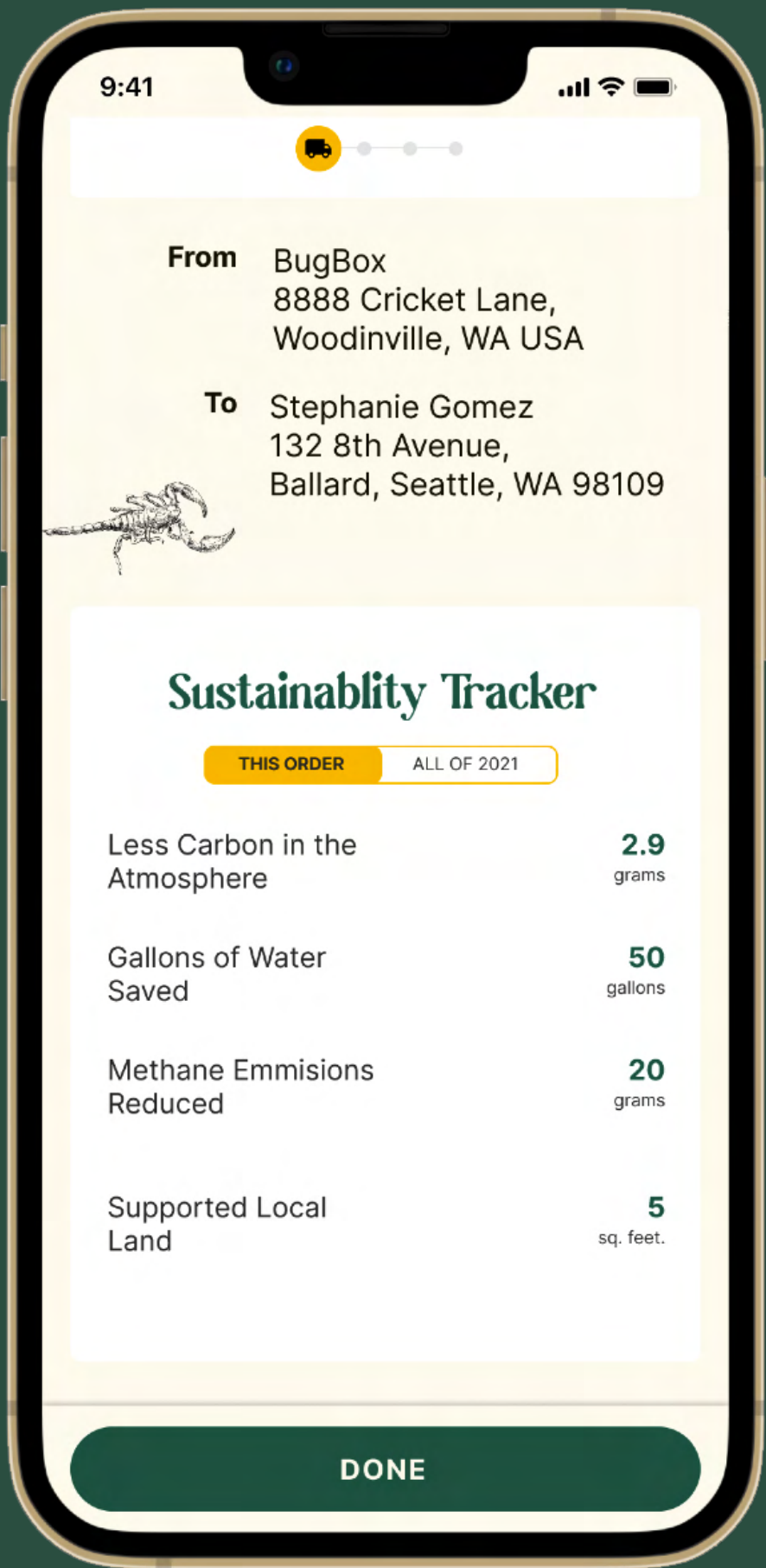
MOBILE-FIRST SIGN-UP & SHOPPING EXPERIENCE



PERSONALIZED PRODUCT RECOMMENDATIONS



PREVIEW OF MEMBERSHIP ONLY INVITES



ENVIRONMENTAL IMPACT TRACKER

RESILIENCE



SUSTAINABILITY



COMMUNITY



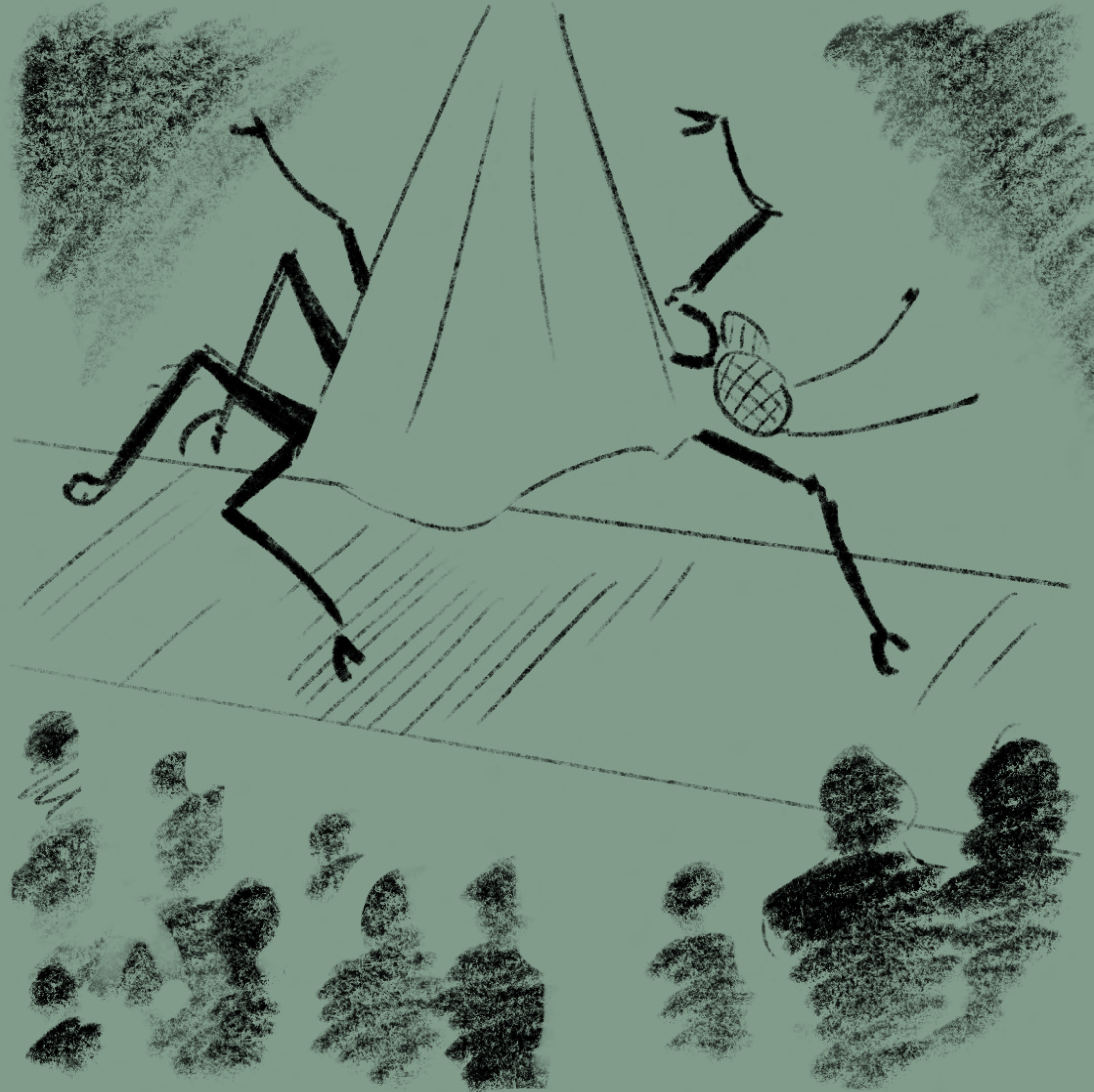
TRUST





Go Forth and Eat Bugs.

BugBox



Appendix

BugBox

BRANDING STANDARDS

LOGO



FONTS

Wordmark

Calfine

Headers

Magilio

Body

Inter

COLOR PALLETE

Primary Colors



Resilient Red - Bold
#DB2218



Resilient Red
#B31A1F



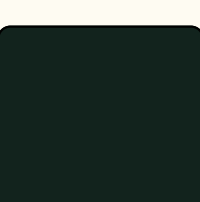
Resilient Red - Dark
#640003



Gumptious Green - Light
#819C8B



Gumptious Green
#2A4E4



Gumptious Green - Dark
#12231D

Secondary Colors



Yummy Yellow
#FCB031



Yummy Yellow - Dark
#CC7D00



Promising Purple - Light
#545694



Promising Purple
#2B1174



Bountiful Brown
#6E4200



Boundless Black
#2B2B2B

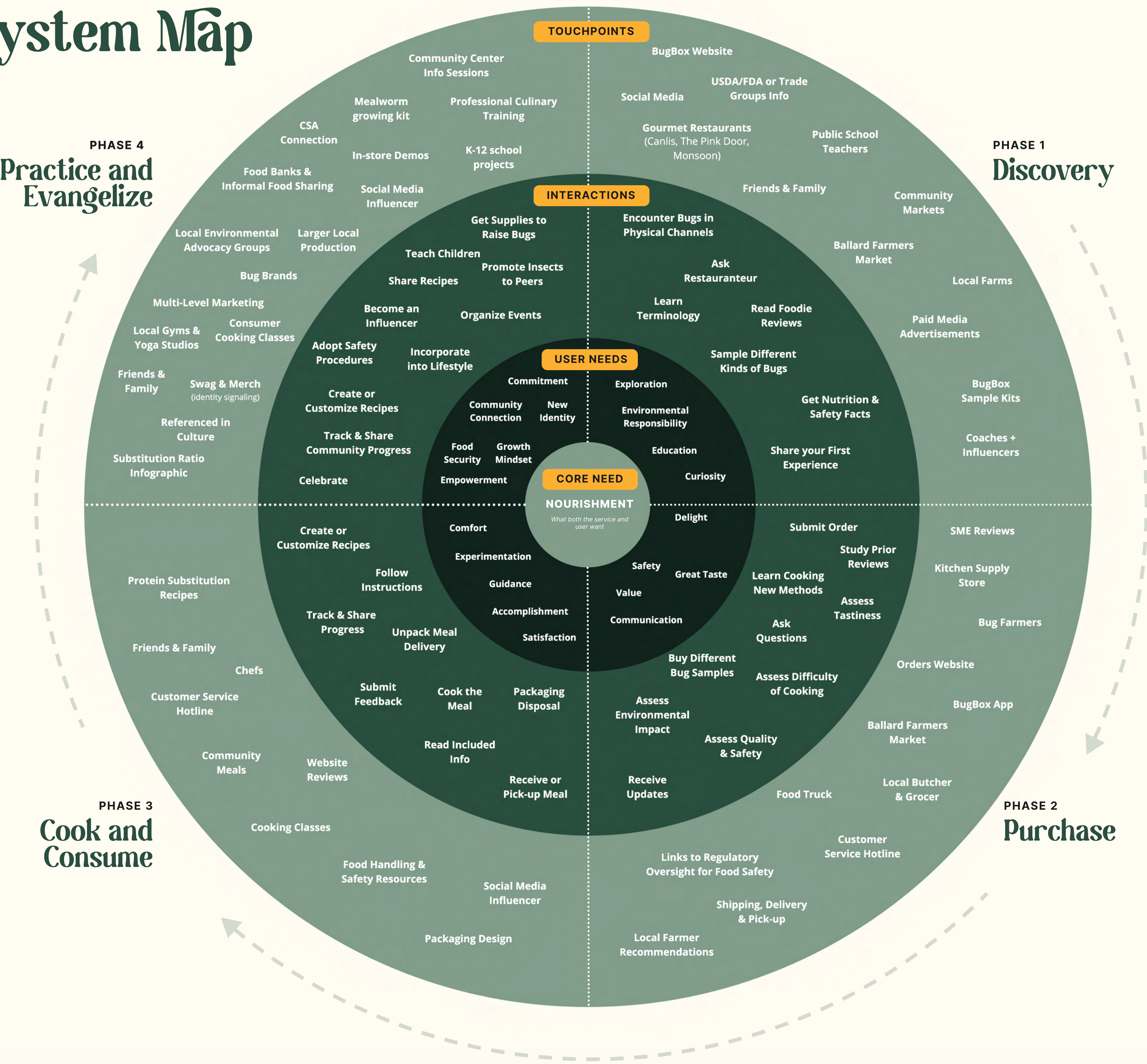


Cream
#FEFBF2

BUGBOX SWAG



Ecosystem Map

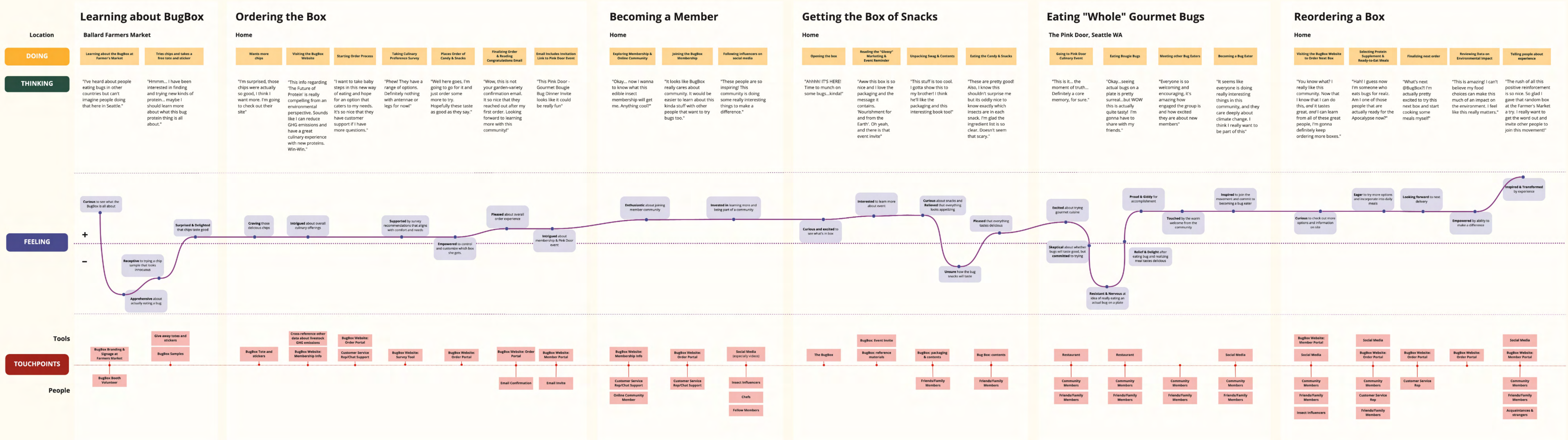


DESIGN STRATEGY

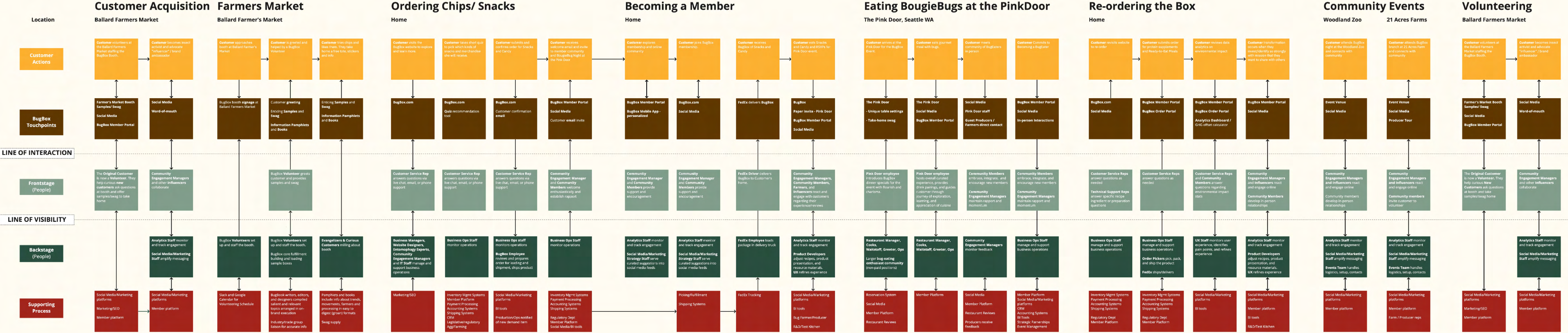
Journey Map

Stephanie is a **34 year old Developer** living in **Ballard, Seattle, WA**. She is an avid cyclist and has been looking for new ways to increase her protein consumption for her winter training.

During one of her weekly trips to the **Ballard Farmer's Market**, she sees a compelling BugBox tent with a sign, saying that they sell bug-based proteins.



Service Blueprint



CITATIONS

Citations

PHOTOGRAPHY

Farmer in Field Photo by Rebecca Ritchie on Unsplash

Pasta Photo by Sorin Popa on Unsplash

Children Eating Photo by Angela Mulligan on Unsplash

Bougie Bugs Event Photo by Priscilla Du Preez on Unsplash

Cattle in Field Photo by Leon Ephraïm on Unsplash

Community Photo by Edgar Castrejon on Unsplash

Tomatoes Photo by Elaine Casap on Unsplash

Hamburger Photo by Eiliv-Sonas Aceron on Unsplash

Onion Rings Photo by Esperanza Doronila on Unsplash

Mushroom Pasta Photo by charlesdeluvio on Unsplash

Squash Soup Photo by Cala on Unsplash

Steak Photo by Chad Montano on Unsplash

Tzaziki Photo by Mor Shani on Unsplash

Nachos Photo by Coffeefy Workafe on Unsplash

Pho Photo by Kirill Tonkikh on Unsplash

Rolls Photo by Brittany Piger on Unsplash

Shrimp Gnocchi Photo by Marika Sartori on Unsplash

Orange Chicken Photo by Drew Taylor on Unsplash

Shrimp Tacos Photo by Daniel Arriola on Unsplash

ICONS

Cricket Icon by Grégory Montigny on Noun Project

Growth Icon by UNiCORN on Noun Project

Grain Icon by Turkkub on Noun Project

Cow Icon by Icons Producer on Noun Project

Earth Icon by Greer Mosher on Noun Project

ASSETS

T-Shirt Mockup by BONFIRE on Figma

Tote Mockup by Mockey.co