

**Session:** Useful Tech That Scales

**Track:** Key Factors in Resilient Food and Agricultural Systems

**Sponsored by:** CoBank

**THANK YOU TO OUR EVENT SPONSORS!**  
**¡GRACIAS A TODAS LAS ORGANIZACIONES QUE FORMAN PARTE**  
**DE LA CUMBRE ALIMENTICIA 2023!**



# SPEAKERS



**John Abizaid**  
Representative,  
Merck Animal Health



**Mimi Bestwick**  
CFO, Replate



**Nicholas Chambers**  
General Manager,  
Valley Roots Food Hub



**Hailey Edmondson**  
VP of Sales & Retention,  
The Food Corridor



**Steven Lupien**  
Director, University  
of Wyoming



**Mindy Montgomery**  
VP ESP & Corporate  
Sustainability, COBank

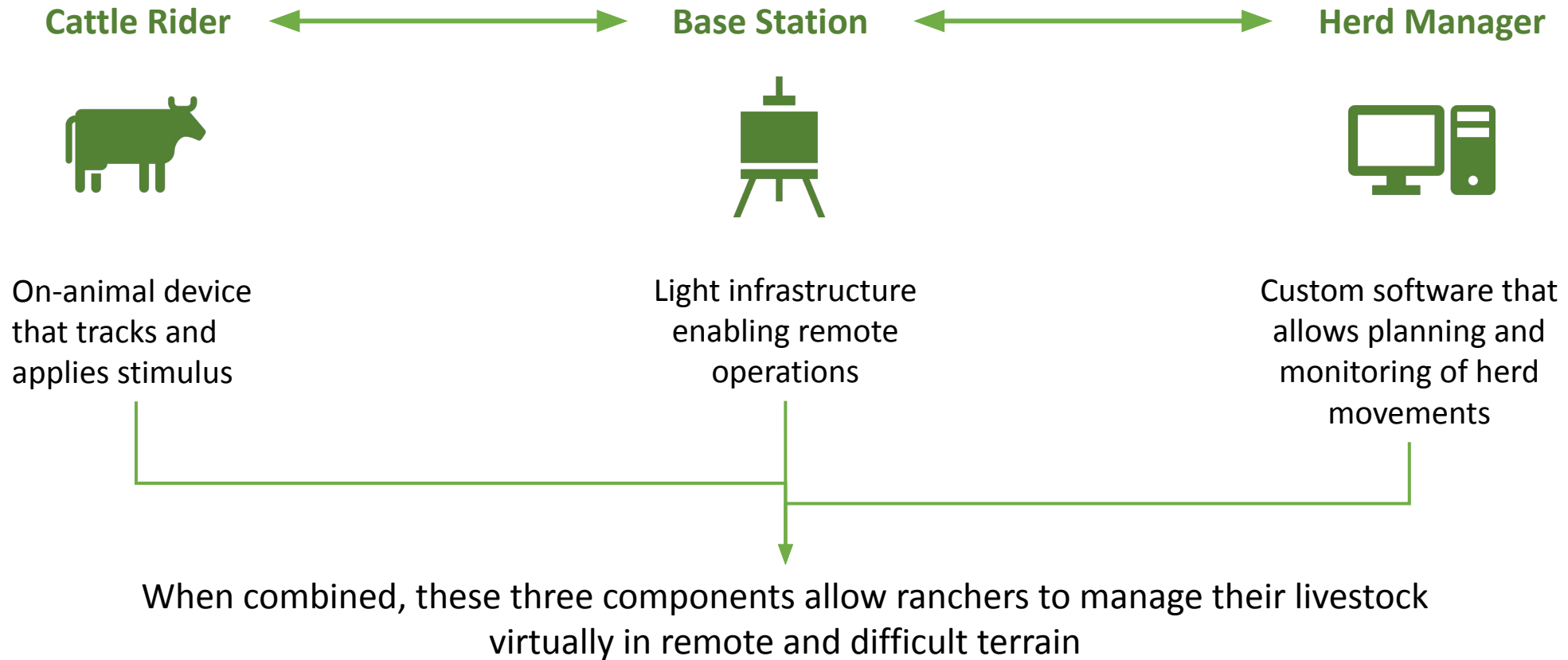




Sustainable **livestock**  
ranching for the 21<sup>st</sup> Century



# Vence System Components





# Cattle Rider Collar

**Radio Chip** communicates with and receives instructions from Base Station

**GPS receiver** determines animals position in relation to Vence boundaries

If the animal encroaches on a Vence boundary, the collar deploys **sound stimulus** followed by **sound + shock stimulus**

The collars memory capacity allows **autonomous operation** even when out of range from Base Stations

**Battery life** depends on usage

- Daily Moves: 3-6 months
- Weekly Moves: 6-9 months
- Tracking Only: 24 months





# Cattle Rider Collar

**Pressure Zones** Sound zone and sound + shock zone

**One Way Gate** Animals receive pressure leaving the inclusion zone but receives no pressure when returning

**Passive Recapture** When an animal returns to the inclusion zone the virtual fence turns back on





# Base Station



Base Stations communicate with collars using **LoRaWAN** technology – ISM Band

**Cellular Backhaul** bridges collar data to the internet

**Solar Panels** allow independent operation in remote areas

Depending on topography, each base station can **cover 10,000-30,000 acres**

Designed to last **10+ years** in the field with little to no maintenance



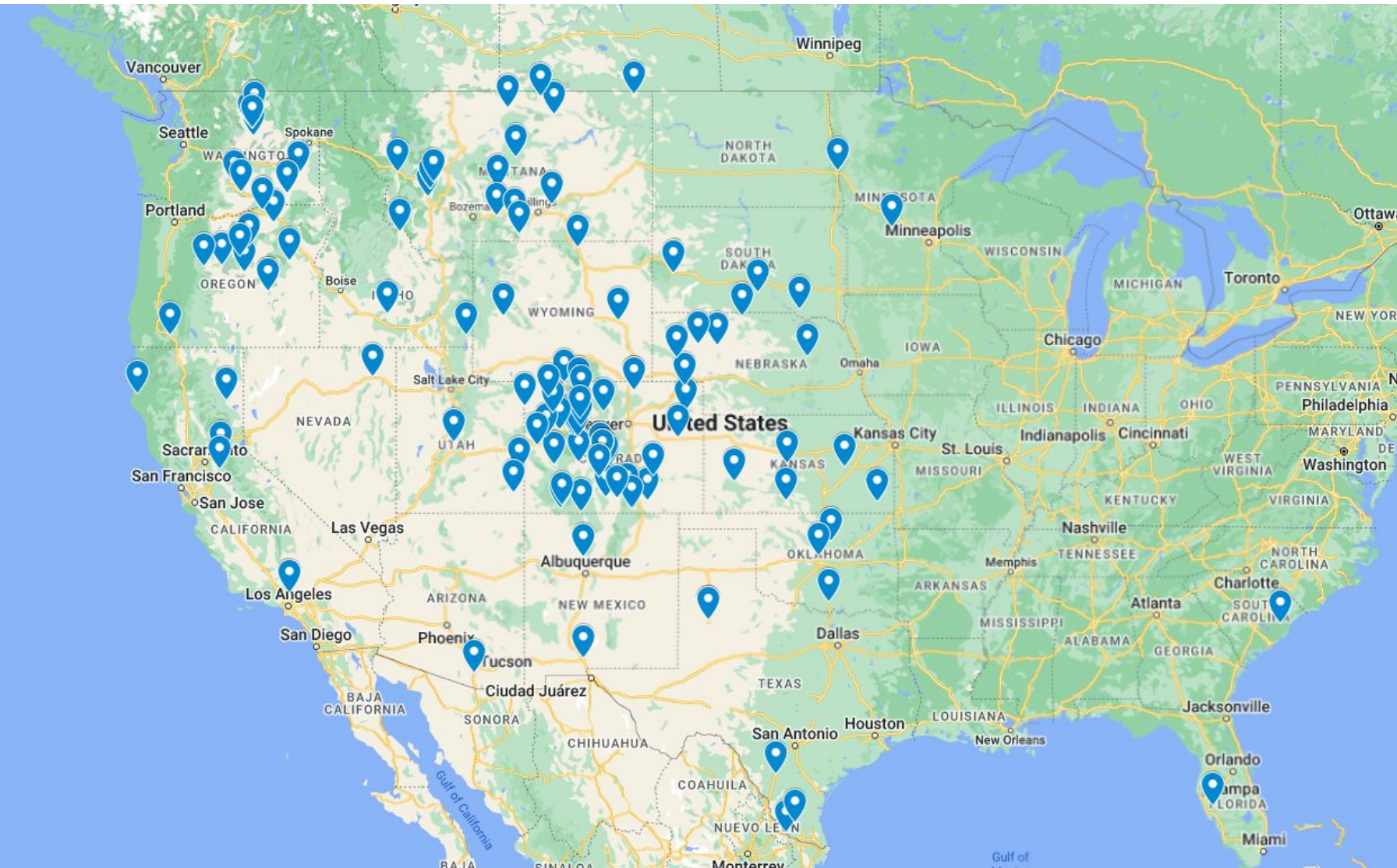
# Herd Manager Software



- **Visualize** pastures and key property landmarks (pond, roads, etc.)
- **Build** and schedule virtual fences weeks in advance – alter them as needed
- **Track** individual animals and visualize fence performance via heatmaps
- **Associate** Ear Tag IDs to Collar IDs
- **Monitor** device battery health



# North American Projects



Vence was **founded in 2016** and has had a continuous running pilot ranch since 2017

12 major **University partnerships** + projects running on **BLM and USFS** lands

Vence has **50,000 collars** deployed in the US and Australia covering **3.5M acres**



# Camblin Livestock + Colorado Parks & Wildlife



Colorado Parks & Wildlife **provided network infrastructure** for the Bitterbrush Wildlife Management Area

Camblin Livestock purchased collars to **manage grazing** on their Bitterbrush lease

Virtual Fencing **minimized impact** on Sage Grouse and Pronghorn populations and enabled **high quality livestock grazing** pressure



# Contact



[www.vence.io](http://www.vence.io)

John Abizaid

[john.abizaid@merck.com](mailto:john.abizaid@merck.com)

+1 603-770-8599





# Colorado Food Summit

December 7, 2023



UNIVERSITY  
OF WYOMING

Center for Blockchain  
and Digital Innovation



# Who am I – Steven Lupien

- **University of Wyoming**
  - **Director UW Center for Blockchain and Digital Innovation (2020)**
  - **Professor (2019)**
- **Author of Blockchain Fundamentals for Web 3.0 (2022)**
- **Wyoming Governor's Office & Legislature (2015-Present)**
- **Digital Asset Trade Association Executive Director (2017)**
- **Founder – Beefchain.io (2017)**
  - **USDA**
- **First Digital Asset (2014)**
- **Five Star Nuclear (2013-2014)**



UNIVERSITY OF WYOMING





- A new type of database that allows multiple parties to see the same information at the same time and trust that it's valid.

- 
- Solves the duplication and reconciliation problem intermediaries have today.



# WHAT IS A Blockchain?





# Blockchain in the Food Industry

- **Traceability:** Blockchain technology enables end-to-end traceability of food products by recording every transaction and movement on an immutable ledger.
  - This transparency allows for swift identification of the origin of contaminated or unsafe food items, making recalls more precise and efficient.
- **Reduced Fraud:** Blockchain's security features and decentralized architecture make it extremely difficult for unauthorized parties to manipulate or counterfeit food-related data.
  - This helps prevent fraudulent activities in the food supply chain, such as the mislabeling of products or false claims about sourcing.





# Blockchain in the Food Industry

- **Real-time Monitoring:** IoT (Internet of Things) devices and sensors can be integrated with blockchain networks to continuously monitor food conditions during transportation and storage.
  - If temperature, humidity, or other critical parameters deviate from safe levels, the blockchain can trigger alerts and corrective actions in real-time.
- **Smart Contracts:** Smart contracts on blockchain platforms can automate compliance checks and regulatory processes, ensuring that food safety standards are met at each stage of the supply chain.
  - Payments and penalties can also be automatically executed based on predefined criteria, incentivizing compliance.





# Blockchain in the Food Industry

- **Trust and Collaboration:** Blockchain fosters trust among stakeholders in the food industry, including producers, distributors, retailers, and consumers. By sharing a common, tamper-proof ledger, participants are encouraged to work together to maintain food safety standards and quickly address any issues that may arise.
- **Consumer Empowerment:** Blockchain technology can empower consumers with access to detailed information about the origins, quality, and safety of the food they purchase.
  - Using QR codes or mobile apps, consumers can scan product labels to access a complete history of the product, helping them make informed choices and support safer food practices.







UNIVERSITY OF WYOMING



# Shared kitchens ... What are the differences?



## Shared Kitchen

Community Kitchen  
Incubator Kitchen  
Underutilized Kitchen

Commissary Kitchen  
Accelerator Kitchen  
Ghost/Cloud Kitchen





Photo Credit: Union Kitchen and Crossroads Community Food Network

# The Shared Kitchen Management Software for Commissaries

The Only Software Designed Exclusively for Shared Kitchen Management

**THE FOOD CORRIDOR** SCHEDULING CLIENTS DOCUMENTS BILLING REPORTING KITCHEN SETTINGS

**Scheduling** [DAILY VIEW](#)

**Submitted Bookings**  
Look at you staying on top of things! There are currently no bookings that need your approval. When a client makes a booking it will appear here for your approval.

**All Spaces Calendar** [EQUIPMENT CALENDAR](#)

Show Calendars [Create New Booking](#)

Hide closed times

Dec 3 — 9 2023

	SUN 12/3	MON 12/4	TUE 12/5	WED 12/6	THU 12/7	FRI 12/8	SAT 12/9
12AM	7:00 p - 3:00 a PREP 1: Friday Food	7:00 p - 3:00 a PREP 2: Berry Leather	7:00 p - 3:00 a PREP 1: test	7:00 p - 3:00 a PREP 2: Friday Food		7:00 p - 3:00 a PREP 1: Curious Cakes Bakery, Incorporated	7:00 p - 3:00 a PREP 1: Friday Food
1AM							
2AM							
3AM							




ACTIVE STATUS

## Path of Yeast Resistance

Silver Billing Plan (40 hours)

## Pending Monthly Charges

These items listed below will be added to "Due Charges" on July 5 at 12:00 AM.

MONTHLY BILL FOR MAY			\$406.00
07/05/2019	ITEM DESCRIPTION	ITEM TYPE	TOTAL
	1 Bin Walk-In Cold Storage	Storage Rental	\$100.00  
	Silver Billing Plan (40 hours)	Time Billing Plan	\$300.00 
		SUBTOTAL	\$400.00
		PLATFORM FEE	\$6.00
		<b>TOTAL</b>	<b>\$406.00</b>

[ADD FEE/CREDIT](#) | [CHARGE NOW](#) | [CHANGE BILLING DATE](#)

## Statements

The charges below have been successfully paid.

June 2019		Total Revenue:	\$75.00 
06/22/2019	Daily Charges for 06/21/2019 (#20301)	\$25.00	
06/12/2019	Daily Charges for 06/11/2019 (#2294)	\$50.00	





## Let's Get Cooking!

Find licensed, commercial kitchens for rent near you!





[Learn About The Kitchen Door](#)

WHAT IS THE KITCHEN DOOR?

**Find licensed, commercial kitchens to take your food business to the next level!**





---

**Kitchens in San Diego, CA**  
 Need a clean, commercially-licensed space? Looking for a way to reduce overhead costs? Ready for a kitchen community that's got your back? We've got you covered. Check out our curated list of the top commercial, commissary, and shared-use kitchens in San Diego, CA.

Showing kitchens within 20 miles of San Diego, CA Show within 20 miles ▾

**Why cook in a commissary kitchen in San Diego, CA?**

As a food entrepreneur, you need a place where you have the freedom to create. Shared-use or commissary kitchens in San Diego, CA have become the go-to-place that chefs, caterers, trucks, and other food producers need to focus on their business. They offer clean, commercially-licensed space so you don't have to worry about the overhead of getting your own kitchen. [Learn more about the Top 5 Reasons to use a Shared-Use or Commissary Kitchen.](#)

- (1) California Culinary Arts Institute - VERIFIED**  
 1620 National Avenue, San Diego, CA 92113, USA
- (2) Moody's - San Diego's Food Truck Hub - VERIFIED**  
 4637 Market St, San Diego, CA 92102, USA
- (3) Pappalecco Production Kitchen - VERIFIED**  
 3402 Kurtz St, Ste 100, San Diego, CA 92110, USA
- (4) Hancock Kitchens - Maker Kitchens - VERIFIED**  
 3425 Hancock St., San Diego, CA 92110, USA
- (5) Hollister Kitchens - Maker Kitchens - VERIFIED**  
 780 Hollister St., San Diego, CA 92154, USA

<https://www.thekitchendoor.com>



Network for Incubator and Commissary Kitchens (NICK)



<https://www.thefoodcorridor.com/resources/>





Hailey Edmondson

The Food Corridor

VP of Sales & Retention

[hailey@thefoodcorridor.com](mailto:hailey@thefoodcorridor.com)

thefoodcorridor.com





Three Votes Everyday

[Order](#) [Suppliers](#) [About](#)

Search...

Show Filter Options

Buyer: **7th Gen Creations**  
Delivery date: **Thursday, Dec. 14, 2023**  
Time left to order: **6 days**  
[Change delivery options](#)

Hide Product Images

## Local Food Boxes

### Harvest Boxes



#### 2023/2024 Winter Fresh Box CSA Pre-Order

From: Valley Roots Food Hub CSA

A wintertime assortment of Colorado bounty! Read More...

Who How Where

**Each, Winter Full Share**

39 Available

\$100.00

ORDER QTY      TOTAL COST

0

\$0.00

## Fruits

### Pears



#### Pears, D'angou, COG

From: Honey Rock Landings

ORDER QTY      TOTAL COST





All Orders FOB. Order Delivery from Peak to Plains

[Order](#) [Suppliers](#) [About](#)

## Welcome to Colorado Food Hub Network

Order For: Anytime fitness

**Make a selection to view market. Order will be confirmed at Checkout**

**Please choose a pick up or delivery date:**

DELIVERY:

**Thursday December 7, 2023**

Between 6:00AM and 6:00PM

Default Address

4990 Brown valley ln.

Colorado Springs , CO 80918

DELIVERY:

**Friday December 8, 2023**

Between 10:00AM and 5:00PM

Default Address

4990 Brown valley ln.

Colorado Springs , CO 80918

[Back to Buyer](#)

[Start Ordering](#)

## Vegetables

### Potatoes & Root Vegetables



#### Potatoes, Fingerlings

From: **White Rock Specialties, RSF**

Regenerative Soil Farmer, grown by Rocky Farms

Who How Where

#### Cases, MIXED, 50 lb case

7 Available

\$75.38

ORDER QTY

0

TOTAL COST

\$0.00

#### Cases, YELLOW, 50 lb case

24 Available

\$69.23

0

\$0.00

#### Cases, RED, 50 lb case

24 Available

\$69.23

0

\$0.00

#### Cases, PURPLE, 50 lb case

24 Available

\$69.23

0

\$0.00



#### Potatoes, Fingerlings, COG

From: **White Rock Specialties, RSF**

Certified Organic [Read More...](#)

Who How Where

#### Cases, YELLOW, 50 lb case

22 Available

\$75.38

ORDER QTY

0

TOTAL COST

\$0.00

#### Cases, MIXED, 50 lb case

19 Available

\$75.38

0

\$0.00

#### Cases, RED, 50 lb case

\$75.38

0

\$0.00





Quality from the soil up

[Order](#) [Suppliers](#) [About](#)

- Market Admin
- Financials
- Orders & Delivery
- Products
- Marketing
- Reports
- Account

[< Return to Products List](#)

## Update Potatoes, Russet COG

Product Info

Inventory

Pricing

### Add Prices

You can set a universal price or individual prices for specific Markets, Buyers and quantities.

Cases, LG, 70 ct avg 50 lbs

Market	Buyer	Min Qty	Net Price	Sale Price	
Tap Root Cooperative	All Buyers	1	\$32.00	\$49.23	<a href="#">Edit</a> <a href="#">Delete</a>
Valley Roots Food Hub CSA	All Buyers	1	\$27.20	\$49.23	<a href="#">Edit</a> <a href="#">Delete</a>
Valley Roots Food Hub WHOLESALE	All Buyers	1	\$32.00	\$42.67	<a href="#">Edit</a> <a href="#">Delete</a>
					<a href="#">Add Price</a>

Bags 5 lb bag



Create a world that  
doesn't expire.





# Overview

replate is a B2B technology platform that helps eliminate food waste at scale by directing surplus food from businesses to communities experiencing food insecurity & by enabling businesses to prevent waste through source reduction

Our value proposition includes:

- robust **technology** to support corporate impact through food donation & source reduction efforts
- dual-sided **network of partners**, including businesses that generate food surplus, other food rescue orgs, & nonprofits that serve communities
- **impact metrics** tracking for ESG / CSR initiatives plus SB 1383 compliance for CA companies
- **employee engagement** for businesses to attract and retain talent that values climate & community impact



# We're tackling two of the biggest problems of our time



## food waste

**1<sup>st</sup>**

solution identified by Project Drawdown is to **fight climate change by reducing food waste**

**40%**

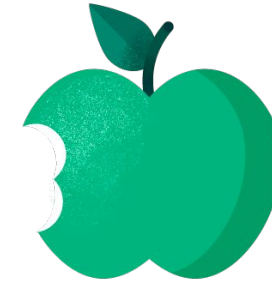
of all food is wasted from farm to table

**3<sup>rd</sup>**

if food waste were a country it would be the **third largest emitter of greenhouse gases**

**24%**

of all water used for agriculture is wasted through food waste



## food insecurity

**1 in 8**

people experience food insecurity in the US

**30+ million**

people live in low-income and low-access food deserts

The **pandemic increased food insecurity among families with children and in communities of color**, who already faced hunger at much higher rates before the pandemic

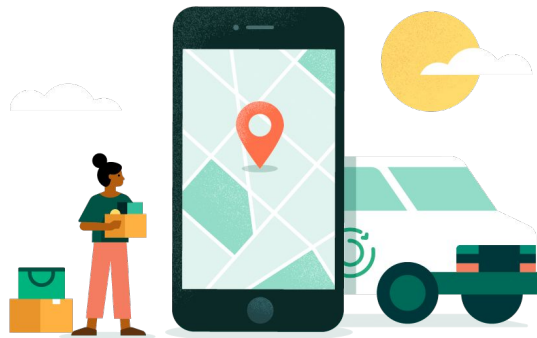


# We've designed a multi-faceted, tech-enabled solution

Replate built a food waste solution that connects businesses & cities that generate food waste with tools for short-term impact through food recovery, and long-term change via source reduction for waste prevention

## Food recovery technology:

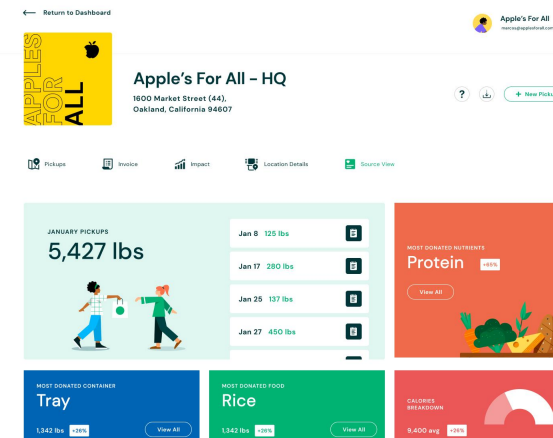
Short-term food waste reduction and improved food access through food recovery to nonprofits serving local communities



&

## Source reduction technology:

Long-term food waste prevention for businesses, cities, & other generators by highlighting surplus trends



**Note:** our source reduction pilot resulted in businesses generating 20%-70% less surplus over time

# Replate partners with **businesses, cities, & nonprofits** for impact

## food surplus generators

includes businesses that generate food waste such as corporations, food producers, hospitals, campuses, airports, restaurants, caterers, and more

## food recipient organizations

includes nonprofits and community based orgs serving communities experiencing food insecurity such as food banks, shelters, job training centers, youth programs, senior centers, and more





# We're scaling impact, with direct and indirect value created



**3.7+ million pounds**  
of food rescued since inception

our goal is to double this number in the next 3 years and prevent millions of pounds of food surplus through source reduction



**3+**  
**million**  
meals  
created



**1+**  
**billion**  
gallons of  
water saved



**3.8+**  
**thousand**  
tons of CO2  
diverted

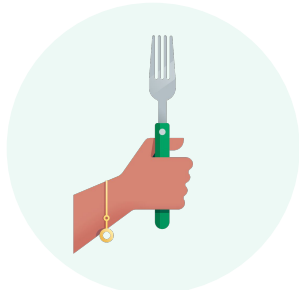
businesses  
influenced



food waste  
education &  
awareness



community-  
centered  
collaborations







**join us in reducing  
food waste &  
food insecurity!**





# SPEAKERS



**John Abizaid**  
Representative,  
Merck Animal Health



**Mimi Bestwick**  
CFO, Replate



**Nicholas Chambers**  
General Manager,  
Valley Roots Food Hub



**Hailey Edmondson**  
VP of Sales & Retention,  
The Food Corridor



**Steven Lupien**  
Director, University  
of Wyoming



**Mindy Montgomery**  
VP ESP & Corporate  
Sustainability, COBank



What is one action that you are likely to do, or do differently, as a result of this session?

1. Grab your phone
2. Go to [www.menti.com](http://www.menti.com)
3. Enter code: **1122 7636**

1. Toma su celular
2. Ir al sitio [www.menti.com](http://www.menti.com)
3. Introduce el código: **1122 7636**





A herd of black cows is grazing in a field. In the background, there are rolling hills and mountains under a clear sky. The scene is captured in a dark, monochromatic style.

**WHAT'S NEXT?**

**LUNCH**

**Show Arena**



**THANK YOU TO OUR EVENT SPONSORS!**

**¡GRACIAS A TODAS LAS ORGANIZACIONES QUE FORMAN PARTE  
DE LA CUMBRE ALIMENTICIA 2023!**



 **FOOD SYSTEMS INSTITUTE**  
COLORADO STATE UNIVERSITY



**COLORADO**  
Department of Agriculture



**COLORADO FOOD SYSTEMS**  
ADVISORY COUNCIL



**COLORADO BLUEPRINT  
TO END HUNGER**



THANK YOU TO ALL OF OUR SPONSORS!

¡GRACIAS A TODAS LAS ORGANIZACIONES QUE FORMAN PARTE DE LA CUMBRE ALIMENTICIA 2023!

Our Organizing Sponsors



Our Sponsors





# TODAY'S AGENDA



bitly