scrap
reducing cafeteria food waste

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Each student...
wastes a \( \sim 0.4 \text{ lbs} \) of food per meal

Each dining hall...
wastes \( \sim 240 \text{ pounds} \) of food per meal

Stanford...
throws out \( \sim 3,900 \text{ tons} \) of food each year

Statistics courtesy of Hannah Mensing and Sonia Baltodano
Outline

❖ Problem
  ➢ Needfinding
  ➢ Prototyping/Testing

❖ Solution
  ➢ Design evolution
  ➢ Final Design
Needfinding - Initial POV’s

Dara needs students to waste less food on their plates

Maria needs to reduce wasted leftovers

Sloane needs more variety in late-night food options
Parallel Prototypes

Leftovers Tracker App ↑
post leftovers so people nearby can come eat them

Compost Bin Feedback App →
prominently display amount of food each person throws out

Leftovers Board ↑
Keep track of available leftovers so people eat them more
Each student wastes ~0.4 lbs of food per meal!
Why?

- Diners on autopilot; not thinking about waste
- Belief that composting isn’t wasteful

Maybe diners just need...

- To realize if they’re systematically wasting food
- To understand food waste’s impact tangibly
We met “Fred”, a student who serves himself more food than he eats because he is not very waste-conscious. It would be game-changing if we could make him aware of his pattern of wasting food to motivate him to change his serving habits.
Final Solution

1. Screen showing **individual waste** as person throws food into compost bin

2. Screen showing **total waste** at stations where people serve themselves food
Design Evolution
YOU WASTED $3 1/2 lb of food
YOU WASTED 1 oz of water
YOU WASTED 0 lb of food!

$0.38 150 lbs of water
$0.38 1/2 daily food eaten
$0.38 0/4 daily food eaten

Feedback: too much text!
YOU THREW OUT 0.27 lbs of food

That equates to:
≈ 27 gal water cost
≈ 7 Kg CO₂ emissions

And is about:
17% of a standard meal

To Learn
More Scan Here:

Feedback: still too much text
Feedback: needs more visual appeal
This food requires about 12,000 gallons of water.

43.5 lbs of food thrown out at Arrillaga today.

About 4 compost bins.


~ 700 minutes of shower time.

Feedback: needs more visual hierarchy.
Final Design
167 lbs of food thrown out at Arrillaga today

This food requires about 70,000 gallons of water

About 4 compost bins

≈ 35,000 minutes of shower time

More at bit.ly/StanfordScraps

167 lbs of food thrown out at Arrillaga today

This food requires about 800 kg of CO₂ emissions

About 4 compost bins

≈ 1200 miles of driving on the highway

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167 lbs of food thrown out at Arrillaga today

This food requires about 800 m² of land

About 4 compost bins

≈ 40 Roble doubles

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167 lbs of food thrown out at Arrillaga today

This food is about 140 average meals

About 4 compost bins

≈ $1400 worth of food

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YOU THREW OUT 0.05 lbs of food

This food required about 0.26 kg of CO₂ emissions

Better than average. Keep it up!

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≈ 0.4 miles of driving on the highway

YOU THREW OUT 0.05 lbs of food

This food is about 2% of an average meal

Better than average. Keep it up!

Learn more: bit.ly/StanfordScraps

≈ $0.40 worth of food

YOU THREW OUT 0.05 lbs of food

This food required about 0.1 m² of land

Better than average. Keep it up!

Learn more: bit.ly/StanfordScraps

≈ 1% of a Roble double

YOU THREW OUT 0.05 lbs of food

This food required about 21 gallons of water

Better than average. Keep it up!

Learn more: bit.ly/StanfordScraps

≈ 10 minutes of shower time
YOU THREW OUT 0.49 lbs of food
This food requires about 2.5 kg of CO₂ emissions
WORSE THAN AVERAGE
Learn more: bit.ly/StanfordScraps
≈ 3.5 miles of driving on the highway

YOU THREW OUT 0.49 lbs of food
This food requires about 204 gallons of water
WORSE THAN AVERAGE
Learn more: bit.ly/StanfordScraps
≈ 98 minutes of shower time

YOU THREW OUT 0.49 lbs of food
This food is about 41% of an average meal
WORSE THAN AVERAGE
Learn more: bit.ly/StanfordScraps
≈ $4 worth of food

YOU THREW OUT 0.49 lbs of food
This food requires about 2.5 m² of land
WORSE THAN AVERAGE
Learn more: bit.ly/StanfordScraps
≈ 12% of a Roble double
Concept video
Next Steps

● Build application

● Integrate system with wi-fi enabled scale’s API

● Work with dining halls to implement system
Summary

- **Insight:** with the right nudge, people would reduce their food waste in cafeterias
- **Innovation:** make food waste tangible
- **Impact:** reduce environmental and economic impact of food waste in cafeterias; inform diners about food waste impact
Attributions

Thanks to The Noun Project for graphic elements
- Jane Pellicciotto, Christopher Classens, Ealancheliyan S, Luis Prado, Marek Polakovic

Thanks to Hannah Mensing and Sonia Baltodano for statistics on food waste
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