About Brandeis & our dining program

• Located outside Boston
• Normally, approximately 3,500 undergrads, 1,500 grad students, 1,000 faculty and staff
• Currently, approximately 2,000 students on campus & subscribed to a meal plan (3,000 meal plans normally)
• 2 dining halls, including one with a kosher side, & several retail locations
• All-takeout-container-service since fall, in-person dining re-opened recently
• Compost bins all over campus, including at waste stations in residence halls
• Our food service partner is Sodexo
Background

2015 – today  Manager, Sustainability Programs, Brandeis

2010 – 2015  Stonyfield Farm Inc. (subsidiary of Danone N.A.)
             • Carbon Master: did farm-to-spoon footprints for 1,000+ SKUs for Stonyfield and Dannon

2008 – 2010  Yale School of Forestry and Environmental Studies

Timeline leading up to Brandeis’ new dining contract

- **2019**
  - Brandeis & Sodexo agree to re-bid contract
  - New VP of operations

- **December**
  - Meetings with vendors
  - Research began

- **March ‘20**
  - Vendor presentations

- **April**
  - Readjust!

- **May**
  - Drafted performance program

- **August**
  - New contract began
Broad goals of our program

1. Reduce the carbon footprint of our food
2. Support New England agriculture
3. Reduce waste
4. Make sustainability a core value of dining
Developing metrics: our approach

- Research, review, interviews
  - Other universities
  - Food to Institution New England, Roots of Change, Food Solutions New England
  - Existing programs
- Brandeis internal stakeholders & Brandeis’ dining consultant
## Metrics 1-4

<table>
<thead>
<tr>
<th>Metric</th>
<th>Benchmark description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Climate Impact: Reduction in greenhouse gas impacts food purchases, measured by Cool Food Calculator</td>
<td>2% annual reduction from 2019</td>
</tr>
<tr>
<td>2 New England-Sourced Food Purchases, defined as foods produced in New England.</td>
<td>2% annual increase from 2019</td>
</tr>
<tr>
<td>3 Sustainable Food Purchases, as defined by products purchased from approved sources of fair, ecologically sound and humane products, such as Future 50, Fair Trade, Certified Humane, Marine Stewardship Council, Fair Food Program, etc.</td>
<td>2% annual increase from 2019</td>
</tr>
<tr>
<td>4 Menu Innovation, Marketing and Education: Increase in annual consumption of plant-based foods</td>
<td>Change in ratio of meat-based to plant-based protein purchases from 2019</td>
</tr>
</tbody>
</table>
How we measure food-related metrics

Gather data
- Regional suppliers (Garelick, Kosher Mart, Fantini, UNFI)
- Sysco
- Russo’s (produce)

Synthesis and research
- All purchases database
- Master data “dictionary”

Analyze results
- Cool Food Calculator/ carbon footprint
- Sustainable attributes, NE sourced

*C-store items are not currently included*
## Data example

<table>
<thead>
<tr>
<th>Provided by Sodexo</th>
<th>Research done by Brandeis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brand ID</strong></td>
<td><strong>Net Weight Lbs</strong></td>
</tr>
<tr>
<td>DALASOG 181</td>
<td>181</td>
</tr>
<tr>
<td>SUNRGRW 74</td>
<td>74</td>
</tr>
</tbody>
</table>
New England-grown or raised by food category

- Unknown: 35.7%
- Possibly some: 0.3%
- Yes: 2.1%
- No: 61.9%

Sustainable attributes by food category

- Has sustainable attribute: 4.2%
- No sustainable attribute: 95.8%

Protein purchases by type

<table>
<thead>
<tr>
<th>Protein type</th>
<th>Animal</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.9% ($)</td>
<td>15.2% (kg)</td>
<td>88.1% ($)</td>
</tr>
</tbody>
</table>
Brandeis’ carbon footprint by scope

- Natural Gas: 44.5%
- Purchased Electricity: 30.7%
- Food purchases: 8.5%
- Directly Financed Air Travel: 2.8%
- Electricity T&D Losses: 1.6%
- Student Commuting: 5.7%
- Faculty Commuting: 1.4%
- Staff Commuting: 4.7%
- Student Commuting: 5.7%
- Directly Financed Air Travel: 2.8%
- Electricity T&D Losses: 1.6%

Scope 1
Scope 2
Scope 3
Brandeis’ carbon footprint by level of control

- Natural Gas: 44.5%
- Purchased Electricity: 30.7%
- Food purchases: 8.5%
- No control
- Some control
- More control

Staff Commuting: 4.7%
Faculty Commuting: 1.4%
Student Commuting: 5.7%
Directly Financed Air Travel: 2.8%
Electricity T&D Losses: 1.6%
How can we footprint our food?

- Excel-based calculator
- 2 inputs: type of food, kg or l
- Provides estimates

<table>
<thead>
<tr>
<th>Food type</th>
<th>Food purchase weight (kg or l)</th>
<th>% boneless</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Animal-based foods</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef &amp; buffalo meat</td>
<td>36,704</td>
<td>100%</td>
</tr>
<tr>
<td>Lamb/mutton &amp; goat meat</td>
<td>815</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Ruminant meats</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pork (pig meat)</td>
<td>1,045</td>
<td>100%</td>
</tr>
<tr>
<td>Poultry (chicken, turkey)</td>
<td>86,543</td>
<td>90%</td>
</tr>
<tr>
<td><strong>Other meats</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ice cream</td>
<td>1,261</td>
<td></td>
</tr>
<tr>
<td>Cream</td>
<td>4,710</td>
<td></td>
</tr>
<tr>
<td>Milk (cow's milk)</td>
<td>29,046</td>
<td></td>
</tr>
<tr>
<td>Yogurt</td>
<td>8,897</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>16,639</td>
<td></td>
</tr>
<tr>
<td><strong>Fish and seafood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finfish</td>
<td>14,418</td>
<td>100%</td>
</tr>
<tr>
<td>Crustaceans (shrimp/prawns)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mollusks</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Cool Food Calculator: Foods included/excluded from footprint

**Included (Mandatory)**

**Animal-based foods**
- Beef & buffalo meat
- Lamb/mutton & goat meat
- Other meats
- Pork (pig meat)
- Poultry (chicken, turkey)
- Dairy (yogurt, cheese, milk, etc.)
- Eggs
- Fish and seafood
- Animal fats

**Plant-based foods**
- Legumes (misc.)
- Beans and pulses (dried)
- Peas
- Peanuts/groundnuts
- Soybeans/Tofu
- Grains/cereals (except rice)
- Corn (Maize)
- Oats (Oatmeal)
- Wheat/Rye (Bread, pasta, baked goods)
- Rice
- Tree nuts and seeds
- Almond, Oat, Rice, Soy milks
- Meat substitutes (Impossible, Beyond, etc.)

**Excluded (“optional” food items)**
- Fruits & vegetables
- Sugars and sweeteners
- Oils
- Alcohol
- Cocoa
- Coffee
- Other miscellaneous items
2019 Baseline Footprint

Food purchases, 2019 (boneless equivalent)
Total: 396,432 kg

- Grains 25.6%
- Poultry 24.4%
- Dairy 19.1%
- Egg 5.6%
- Seafood 4.5%
- Ruminant meats 9.2%
- Legumes/nuts/seeds 9.9%
- Plant-based subs. 1.5%

Food-related GHG emissions from agricultural supply chains, 2019
Total: 2,704 MT CO2e
6.8 kg CO2e/kg food

- Ruminant meats 55.5%
- Dairy 13.0%
- Poultry 15.7%
- Grains 6.6%
- Eggs 3.0%
- Seafood 3.3%
- Pork 0.3%
- Legumes/nuts/seeds 2.4%
- Plant-based subs. 0.1%
Goal: 2% reduction in food footprint per year

How?
• Model: How much beef would we have to reduce to gain a 2% footprint reduction every year?
  • Answer: 4%

<table>
<thead>
<tr>
<th>Brandeis’ food footprint</th>
<th>(kg CO2e/ kg of food)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019 baseline</td>
<td>6.82</td>
</tr>
<tr>
<td>Replace 4% of beef with plant-based protein</td>
<td>6.68</td>
</tr>
<tr>
<td>Replace 4% of beef with poultry</td>
<td>6.69</td>
</tr>
</tbody>
</table>
What’s 50 tonnes of CO2 worth?

Shapiro Campus Center LED lighting upgrade
$200,000

Reduce food footprint
$0
Carbon footprint reduction initiatives

1. Reduce beef in menus

Beef appeared 32x/week in fall
Will be 19x now
Default burger = mushroom-blended

In Spring 2021, Beef Appears 13 times Less Times Per Week compared to Fall 2020
WEEKLY-50% less ground beef used
Carbon footprint reduction initiatives

2. More Meatless Mondays

*2x/month instead of 1x/semester*
Carbon footprint reduction initiatives

3. Plant-based events

14 dining events planned around plant-based diets, health & nutrition (30% of events)
Carbon footprint reduction initiatives

4. 2 new plant-based menu concepts
Study led by Brandeis Prof. Brian Donahue
Call for NE to source 50% of its food by 2060

Examples from February:
- Squash
- Yams
- Mushrooms (mushroom-blended burger)
- Apples

Baseline: 1.9% of spend*
Goal: 3.9% of spend

*Subject to change; still analyzing data on produce supplier
Sustainable Attributes
What counts as “sustainable”

Definitions
• Certified Humane
• Cage-free
• Pasture-raised
• Organic
• Non-GMO
• MSC
• Future 50 foods

Baseline: 4.5% of spend
Goal: 6.5% of spend
Fall 2020: 6.9%
Sustainable attributes initiatives

Including Future 50 foods in menus

• Provides high-quality protein, gluten-free
• Requires low water, fertilizer, and energy relative to traditional cereals (eg, corn, wheat, rice)
• Can grow under severe drought conditions when most modern grain crops fail
Menu Innovation, Marketing and Education
### Animal-based protein sources

<table>
<thead>
<tr>
<th>Food</th>
<th>Protein type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef &amp; buffalo meat</td>
<td>Animal</td>
</tr>
<tr>
<td>Lamb/mutton &amp; goat meat</td>
<td>Animal</td>
</tr>
<tr>
<td>Other meats</td>
<td>Animal</td>
</tr>
<tr>
<td>Pork (pig meat)</td>
<td>Animal</td>
</tr>
<tr>
<td>Poultry (chicken, turkey)</td>
<td>Animal</td>
</tr>
<tr>
<td>Dairy</td>
<td>Animal</td>
</tr>
<tr>
<td>Butter</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Cheese</td>
<td>Animal</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Cream</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Milk (cow’s milk)</td>
<td>Animal</td>
</tr>
<tr>
<td>Yogurt</td>
<td>Animal</td>
</tr>
<tr>
<td>Eggs</td>
<td>Animal</td>
</tr>
<tr>
<td>Fish and seafood</td>
<td>Animal</td>
</tr>
<tr>
<td>Fish (finfish)</td>
<td>Animal</td>
</tr>
</tbody>
</table>

### Plant-based protein sources

<table>
<thead>
<tr>
<th>Food</th>
<th>Protein type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legumes (misc.)</td>
<td>Plant</td>
</tr>
<tr>
<td>Beans and pulses (dried)</td>
<td>Plant</td>
</tr>
<tr>
<td>Peas</td>
<td>Plant</td>
</tr>
<tr>
<td>Peanuts/groundnuts</td>
<td>Plant</td>
</tr>
<tr>
<td>Soybeans/Tofu</td>
<td>Plant</td>
</tr>
<tr>
<td>Grains/cereals (except rice)</td>
<td>Plant</td>
</tr>
<tr>
<td>Corn (Maize)</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Oats (Oatmeal)</td>
<td>Plant</td>
</tr>
<tr>
<td>Wheat/Rye (Bread, pasta, baked goods)</td>
<td>Plant</td>
</tr>
<tr>
<td>Rice</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Tree nuts and seeds</td>
<td>Plant</td>
</tr>
<tr>
<td>Plant-based milk substitutes</td>
<td>Plant</td>
</tr>
<tr>
<td>Almond milk</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Oat milk</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Rice milk</td>
<td>Not a protein source</td>
</tr>
<tr>
<td>Soy milk</td>
<td>Plant</td>
</tr>
<tr>
<td>Impossible burger</td>
<td>Plant</td>
</tr>
</tbody>
</table>

**Baseline:** 10.7% plant-based  
**Goal:** 10.7%  
**Fall 2020:** 12.4%
Resources for promoting plant-based menu items

1. WRI Playbook
Resources for promoting plant-based menu items

2. Edgy Veggies Toolkit
Developed by Stanford Department of Psychology, Menus of Change Collaborative

Interactive tool: [http://sparqtools.org/edgyveggies/](http://sparqtools.org/edgyveggies/)


<table>
<thead>
<tr>
<th>Vegetable</th>
<th>Edgy Label</th>
<th>Recipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Ultimate Chargrilled Asparagus</td>
<td>Grilled asparagus with salt and pepper</td>
</tr>
<tr>
<td>Beets With Oranges</td>
<td>Twisted Citrus-glazed Beets</td>
<td>Beets roasted with olive oil and tossed with mandarin oranges</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Sesame Garlic-roasted Broccoli With Creamy Tahini Sauce</td>
<td>Broccoli roasted with olive oil, drizzled with tahini sauce (garlic, sesame oil, tahini, red wine vinegar, salt) finished with sesame seeds</td>
</tr>
</tbody>
</table>
Waste
## Metrics 5-8

<table>
<thead>
<tr>
<th>Metric</th>
<th>Benchmark description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Reduction: Changes in bulk waste disposal, quarterly in total weight and/or on a per-meal-served basis (on hold due to covid)</td>
<td>Change from Jan-Mar 2020</td>
</tr>
<tr>
<td>Recyclables: Rejections of recyclable material because of contamination</td>
<td>0 rejections by waste hauler</td>
</tr>
<tr>
<td>Waste Diversion: Changes in recycled and composted waste rates in Usdan and Sherman</td>
<td>30% compost, 20% recycled</td>
</tr>
<tr>
<td>Disposables: Reduction in single-use items (on hold due to covid)</td>
<td>Change from 2019</td>
</tr>
</tbody>
</table>
Waste reduction initiatives

1. Leanpath implemented in January
Waste reduction initiatives

2. Swap utensil kits for compostable, single utensil dispensers
Waste reduction initiatives

3. Utensil & bag opt-out added to Bite app

4. Eliminated plastic bags, using compostable containers
Moving forward

- Trialing compostable take-out bags
- Post-covid, return to initiative to eliminate bottled water, reusable dishware in dining
- Implement waste reduction goals put on hold
- Considering joining Cool Food
THANK YOU

mfischer@brandeis.edu