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Catering Food Waste at UVM: Benchmark Data & Recommendations

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Catering Food Waste at UVM: Benchmark Data & Recommendations

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2019-2020

Introduction

Across college campuses in the United States, food insecurity and waste have become less tolerated, which has led to growth in the number of organizations that work to address the issue. UVM has been composting food scraps from the dining halls since the 1990s (personal communication, Corey Berman), a practice now required by law after the passage of Vermont's Universal Recycling Law that bans food scraps from landfills. Today, campus-wide composting collection redirects almost two tons of pre- and post-consumer food waste daily to Green Mountain Compost, a local composting facility (UVM STARS Report, 2020). UVM Dining is also committed to initiatives that redirect edible leftover food from compost to consumers through partnerships with the Student Government Association and the Food Recovery Network. Leftover food from the dining halls is donated to the Chittenden Emergency Food Shelf, totalling approximately 15,000 pounds per year (UVM STARS Report, 2020). UVM introduced "trayless dining" to reduce food waste by limiting the amount of food customers can carry. While trayless dining encourages customers to take only what they can eat, it also reduces the use of materials, water, and energy used to supply and clean trays. Additionally, UVM Dining - in partnership with EcoReps - educates students about the importance of reducing food waste with "Weigh the Waste", an annual event that measures post-consumer waste for one week in October at Redstone Unlimited.

Since 2016, UVM's Food Insecurity Working Group (FIWG) has created solutions to decrease food insecurity on campus. This group is composed of members from many on- and off-campus organizations, including UVM Dining, Student Government Association, Food Recovery Network, UVM Center for Health and Wellbeing, the Nutrition and Food Science Department, Hunger Free Vermont and the Intervale Center. In the spring and fall semesters of 2017, the FIWG conducted surveys of 4,500 UVM students (undergraduate, graduate, and medical) to determine baseline levels of food insecurity on campus. They found that between 15-20% of students met the United States Department of Agriculture (USDA) criteria for food insecurity, with higher rates for first-generation students and those living off-campus (UVM FIWG, n.d.). Students of color and LGBTQI students were significantly more likely to be food insecure in one of the two surveys (UVM FIWG, n.d.). In 2019 the FIWG and UVM Dining piloted "Swipe out Hunger", a meal share program developed by a national non-profit. This program alleviates food insecurity by redirecting donated guest meal "swipes" to a virtual bank, accessible by students with short-term financial difficulties. In the 2019-2020 academic year, 984 swipes were donated to students in need. In the spring of 2020, UVM's Student Government Association and the Graduate Senate opened Rally Cat's Cupboard, a "low barrier, on-campus food pantry with the mission to alleviate food insecurity among UVM graduate and undergraduate students by supplying them with healthy emergency food" (Rally Cat's Cupboard Facebook Group).Through these programs and initiatives, UVM and UVM Dining have partnered to address both issues of food waste and food insecurity on campus.

UVM Dining's catering team has also reduced food waste. Catering staff are trained to offer smaller portion sizes more frequently, so food that remains unserved can be repurposed. For example, large salads are split into two bowls, with the second offered only when the first is

empty or requested by the client. Staff is also taught to refill a tray that is partially empty rather than providing a full replacement tray so that food remaining on the second tray can be repurposed. Chefs also prepare catering food with food waste reduction in mind. For example, chicken is cooked the day of the event rather than the day before, which allows it to be repurposed with maximum shelf life, if not consumed.

Building on these existing efforts, UVM Dining is in the process of developing guidelines to redirect waste by first examining the extent to which food waste is generated in event spaces. Catered events happen every day for meetings, celebrations, presentations, and conferences. Food is offered buffet style, pre-packaged or plated at these events, with attendees grazing over the course of one to several hours. Due to many factors, such as attendance, preference, ordering systems and allergens, there may be leftovers. The structure of catering orders, which asks clients to order food for a specific number of *people* rather than a specific number of *portions*, requires flexibility. This ordering strategy obliges UVM Dining to use their knowledge as service providers to estimate the amount of food needed for an event, ensuring that clients are satisfied. However, this may also lead to more food being offered than consumed.

In 2012, Vermont was the first state to legislatively adopt a food recovery hierarchy for prioritization of food waste as part of the Universal Recycling Law, based on a heircary developed by the Environmental Protection Agency (EPA).This model rates the preferred routes for redirecting food waste, with landfill/incineration at the bottom and source reduction at the top (see Figure 1). It has been referenced by both UVM and UVM Dining, who manage organic waste. For example, cooking oil used in food preparation is repurposed as biodiesel. In the interest of redirecting leftover catering food to more preferred levels in the hierarchy, UVM Dining employed a graduate fellow to 1) gather data on the magnitude of waste produced at catered events in one location, and 2) provide recommendations on how to best address catering food waste.

Figure 1. Food Recovery Hierarchy, EPA

Methods

This project focuses solely on catered events served on-site at the campus student center, the Dudley H. Davis Center. From September 2019 through March 2020 there were 1,424 catered events across the UVM campus,
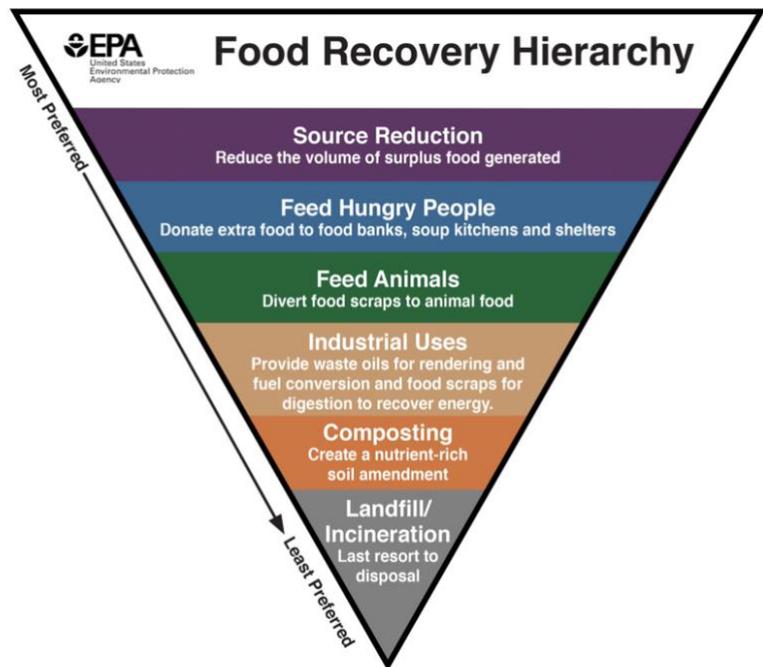
with the Davis Center hosting 378 of those events (27%). Davis Center catering events are served out of a 4th floor catering kitchen with an elevator that connects directly to the 2nd floor main kitchen. Meal components can be stored in portable refrigeration and heating units within food safe temperature ranges. These items can safely be returned to the 2nd floor main kitchen if left unserved. Data collection was confined to the Davis Center due to the 10 hr/week time constraint of the graduate student. This project is the first step in developing a baseline understanding of the volume of catering waste produced, with the possibility of further data collection at additional locations in the future.

During the 2019-2020 school year, we planned to measure food waste for three weeks in both the fall and spring semesters. The weeks were chosen based on graduate student availability, school schedule and calendar events. Avoiding school breaks and special weeks, such as homecoming, we gathered data from a variety of catered events, from small groups to large presentations, from hor d'oeuvres to buffets and from breakfast to dinner meals. Events were chosen based on auditor schedules and event type (no plated meals) in order to ensure universality, with a final sampling from five of each meal type: breakfast, lunch, appetizers, and dinner. Due to COVID-19, however, the number of audits we were able to conduct was 15 (see Table 1). Only one dinner event was collected, as there were few dinner events scheduled during the weeks that we selected to audit; more often, these instead were informal gatherings with appetizers.

Table 1. *Number of Meals Audited by Type*

Meal Type	Breakfast	Lunch	Dinner	Appetizers
Number of Audits	4	5	1	5

Note: N=15

The total number of catered events on the UVM campus from September-December 2019 was 915. Of those, 248 were located in the Davis Center (27%). The total number of catered events on the UVM campus for January-March 9 was 509, with 130 (26%) located in the Davis Center (see Figure 2). We captured 3% of catered events in the fall and 5% in the spring, for a total of 4% across both semesters. With these numbers in mind, the data we collected is meant to be a benchmark, giving stakeholders a preliminary understanding of the extent of catering food waste on UVM's campus.

Number of Catered Events on UVM Campus
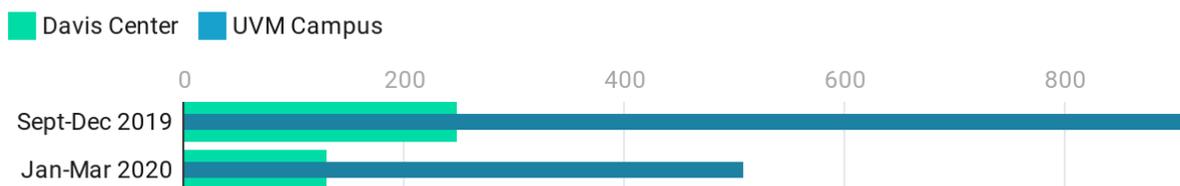
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Figure 2. Total number of catered events on UVM Campus compared to number of catered events within the Davis Center. N=1,424

In order to obtain percentages for catering food waste, we weighed food over the duration of an event, a total of four times. First, food was weighed in its container (e.g. hotel pan, platter) as it arrived to the 4th floor catering kitchen. Second, food was weighed as it returned from the catered event. Third, food was weighed after staff were allowed to have leftovers. Finally, after any remaining food was placed in the compost, each container was weighed empty. All weights were made on the same scale, in the same location in the staging kitchen. The four weights were taken as follows:

1. *Initial weight*: food arrives into the staging kitchen and is weighed
2. *Weight after client consumption:* food returns from event and is weighed
3. *Weight after staff consumption:* staff is allowed to eat, and the remainder is weighed
4. *Weight of container:* remaining food is composted and containers are weighed, empty

Data was entered into a spreadsheet where formulas were utilized to adjust values for weight of the container. Table 2 provides information about the mathematics performed to obtain the final measurements used in analysis.

Table 2. *Description of Calculations for Catered Food*

Calculation performed	Final measurement obtained by calculation
Initial weight - weight of tray =	Weight of food *from kitchen*
Initial weight - weight after client consumption =	Weight of food *consumed by client*
Weight after client consumption - weight after staff consumption =	Weight of food *consumed by staff*
Weight after staff consumption - weight of container =	Weight of food *composted*

Food that was not served to the client and remained covered and temperature controlled in the kitchen was returned to the 2nd floor main kitchen for later use (e.g. cheese platter, bagels, salsa). Thus, food prepared for catered events could end up in one of the four categories at the conclusion of the event: 1) consumed by the client, 2) consumed by catering staff, 3) returned to the 2nd floor main kitchen, or 4) composted. Percentages were calculated by dividing the weight of the food in each of these categories with the initial weight of food provided. For these calculations, adjusted weights were used (see Appendix A).

In order to ascertain the percentage of food consumed, composted, or repurposed, percentages were calculated for each food item offered, as well as for each meal overall. Figure 3 provides an example of a catered appetizers event featuring cookies, hummus, chips, and salsa.

Example of Meal Audit: Percentage to Final Destinations
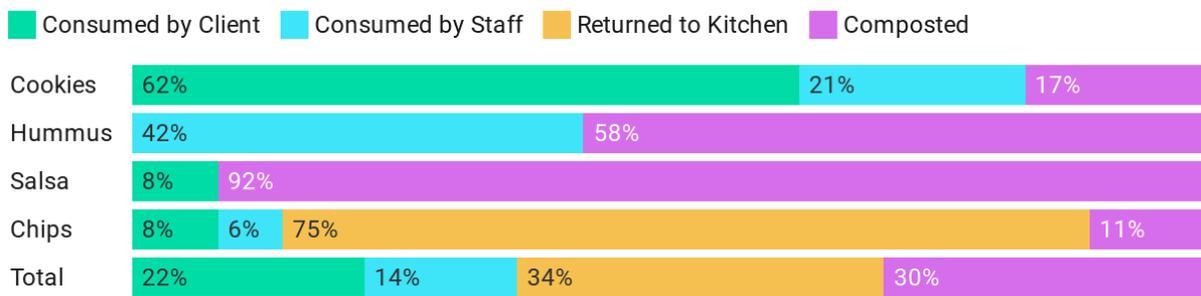
Figure 3. *Example of an audited "Appetizers" event, showing percentage of catered food in final destinations*

All food items offered in a meal were weighed including dips and sauces, which, if unused, can be offered at other meals; however, salad dressings were not captured. Uneaten food from the client's plates that was composted was not captured, due to the understanding that this food would not be able to be redirected to other humans for consumption. Examples of foods weighed include: fruit platters, scones, chicken tenders, broccoli rabe tarts, sheet cake, sandwiches, pasta salad, french toast, bacon, broccoli cheddar quiche, yogurt, meat and cheese platters, spinach artichoke dip, pita chips, crab cakes, mae ploy sauce, sweet chili sauce, baked cod, lemon basil chicken, pasta sauce, and salad.

Results

Across all the events, 17% of catered food was composted, 61% was consumed by the client, 9% was eaten by catering staff and 13% was taken back to the 2nd floor main kitchen for re-utilization (See Figure 4).

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Mean Percentage of Catered Food to Final Destinations
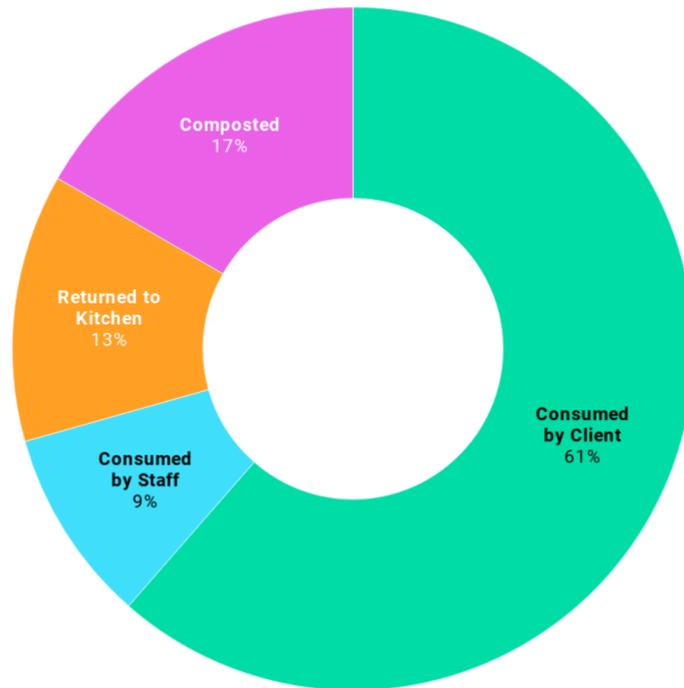
Figure 4. *Percentage of catered food to final destinations, averaged across all audited catering events*

The amount of catering food that ended up in the four final destinations varied by meal. Figure 5 shows the average percent of catered food that ended up in each destination, organized by meal type. On average, the one dinner measured produced the most compost (37%) and appetizers the least (10%). However, only one dinner event was audited due to COVID-19 restrictions, limiting this result.

Percentage of Catered Food to Final Destinations by Meal Type
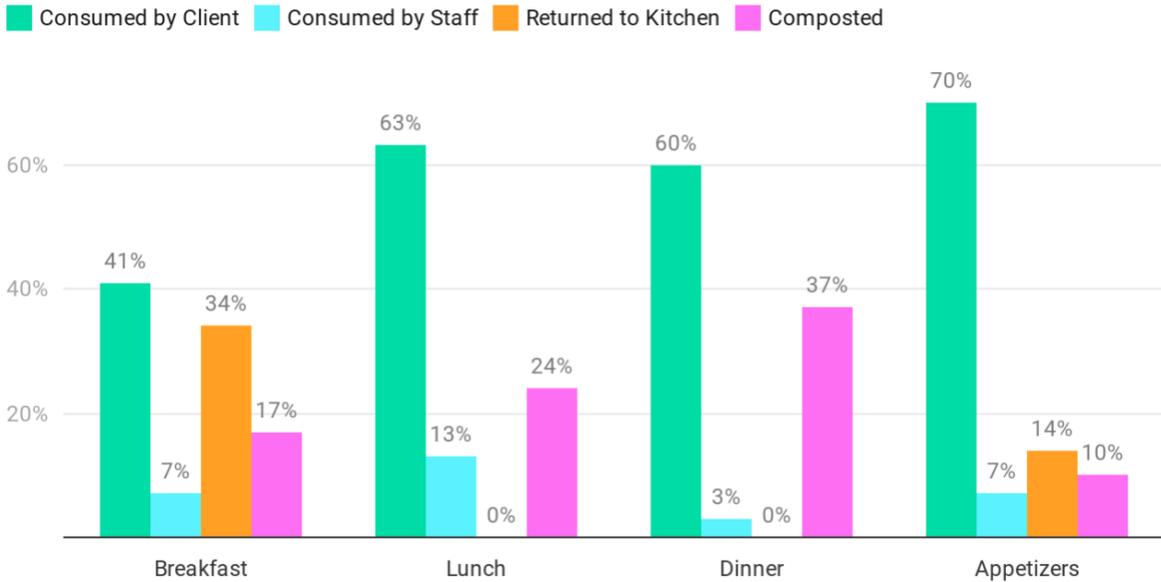
Figure 5. *Average percentages of food to each destination by meal*

        Figures 6-9 show percentages for all audited events, divided by meal type: breakfast, lunch, dinner, and appetizers.

Percentage to Final Destinations: Breakfast Audits

	Nov 1	Jan 28	Jan 29	Feb 13
Consumed by Client	23	58	62	67
Consumed by Staff	5	25	6	8
Returned to Kitchen	64	0	0	0
Composted	9	17	32	25
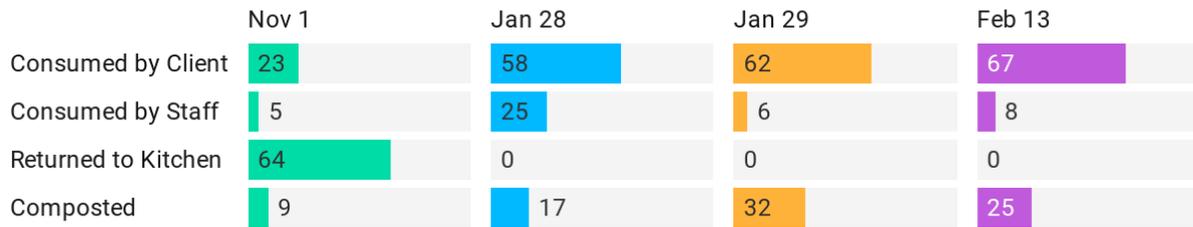
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Figure 6. *Percentage of catered food to final destination for four audited breakfast meals*

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Percentage to Final Destinations: Lunch Audits

	Oct 28	Oct 30	Oct 31	Nov 11	Feb 11
Consumed by Client	75	70	47	62	65
Consumed by Staff	10	4	17	18	6
Returned to Kitchen	0	0	0	0	0
Composted	15	26	37	19	29
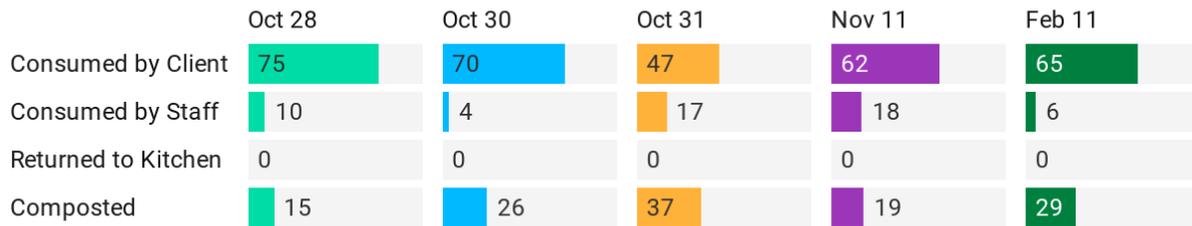
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Figure 7. *Percentage of catered food to final destination for five audited lunch meals*

Percentage to Final Destinations: Dinner Audit

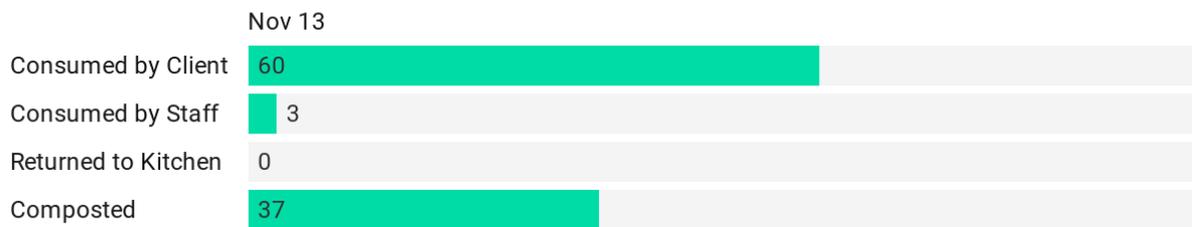|	Nov 13
Consumed by Client	60
Consumed by Staff	3
Returned to Kitchen	0
Composted	37

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Figure 8. *Percentage of catered food to final destination for audited dinner meal*

Percentage to Final Destinations: Appetizer Audits

	Nov 11	Nov 15	Jan 27	Feb 11	Feb 13
Consumed by Client	37	83	73	62	22
Consumed by Staff	30	5	2	21	14
Returned to Kitchen	0	2	20	0	34
Composted	33	11	5	17	30
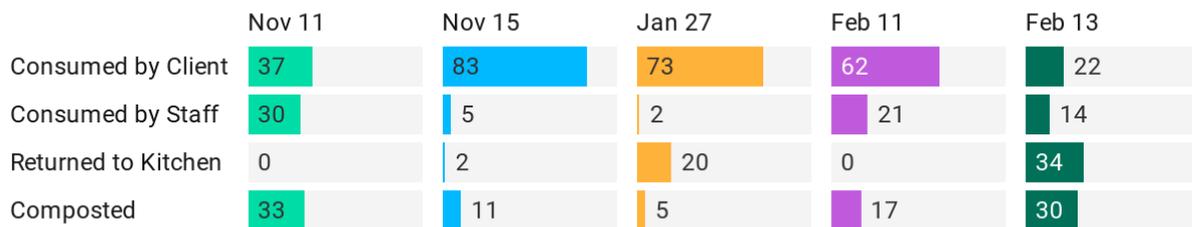
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Figure 9. *Percentage of catered food to final destination for five audited appetizer meals*

Consumed by Client

Across all audited meals clients consumed an average of 61% of catered food. This reflects the percentage of food consumed out of all food prepared for the event, even if that food was not placed out for consumption (ie. extra trays that were not needed). The range of consumption by client across all meals was 22%-83%. Figure 10 shows the range of food consumed by the client divided by meal type.

Percentage of Catered Food Consumed by Client

Breakfast	23%	67%
Lunch	47%	75%
Dinner	60%	60%
Appetizers	22%	83%

0%   25%   50%   75%   100%
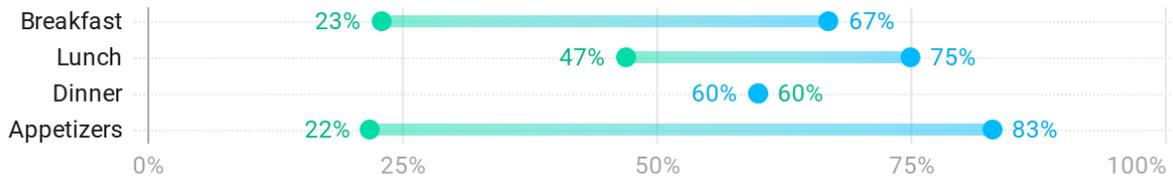
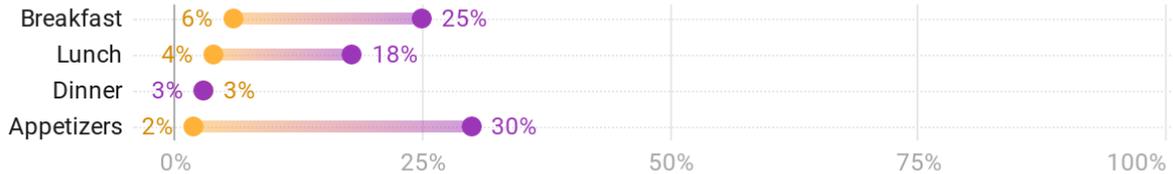Figure 10. *Range (in percent) of catered food consumed by the client by meal type. The green dots represent the meal with the lowest percentage of food consumed by the client; the blue dots represent the meal with the highest percentage of food consumed by the client. Averages per meal type are given in Figure 5.*

Consumed by Staff

Across all audited meals staff consumed an average of 9% of catered food. This reflects the percentage of catered food that staff consumed out of the total food prepared for the event, not the amount of food left over after serving the client. The range across all meal types was 2%-30%. Figure 11 shows the range of food consumed by staff members divided by meal type.

Percentage of Catered Food Consumed by Staff

Breakfast	6%	25%
Lunch	4%	18%
Dinner	3%	3%
Appetizers	2%	30%

0%   25%   50%   75%   100%

Figure 11. *Range (in percent) of catered food consumed by staff by meal type. The orange dots represent the meal with the lowest percentage of food consumed by staff; the purple dots represent the meal with the highest percentage of food consumed by staff. Averages per meal type are given in Figure 5.*

Returned to 2nd Floor Main Kitchen

Across all audited meals, 13% of catered food was returned to the 2nd floor main kitchen for repurposing. The range across all meal types was 0-64%; 73% of audited meals had no food returned to the kitchen. Figure 12 shows the range of catered food that was returned to the 2nd floor main kitchen, divided by meal type.

Percentage of Catered Food Returned to Kitchen

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Figure 12. *Range (in percent) of catered food returned to the 2nd floor main kitchen for reutilization. The green dots represent the meal with the lowest percentage of food returned to the kitchen; the blue dots represent the meal with the highest percentage of food returned to the kitchen. Averages per meal type are given in Figure 5.*

Composted

Across all audited meals 17% of catered food was composted. This reflects the percentage that was composted out of the total food prepared for the event. The range across all meal types was 5-37%. Figure 13 shows the range of food composted, divided by meal type.

Percentage of Catered Food Composted

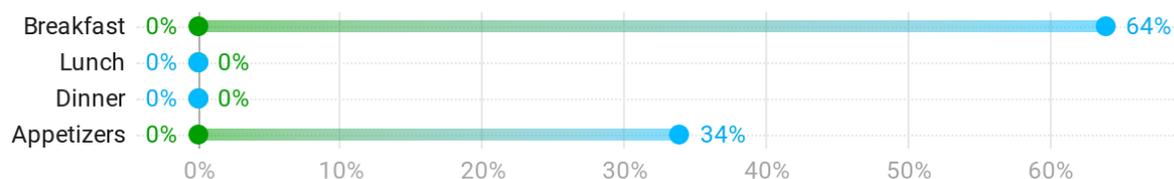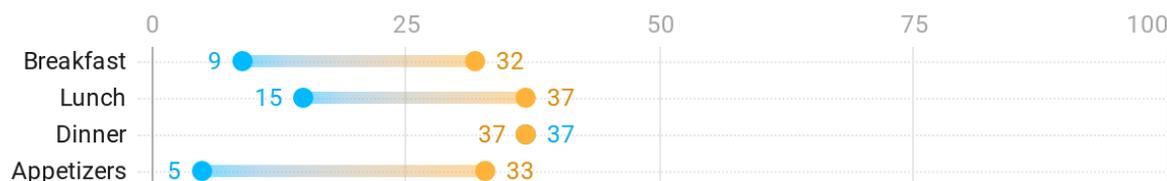

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Figure 13. *Range (in percent) of catered food composted. The blue dots represent the meal with the lowest percentage of food to compost; the orange dots represent the meal with the highest percentage of food to compost. Averages per meal type are given in Figure 5.*

Discussion & Recommendations to UVM & UVM Dining

Overall, 17% of catered food was composted. While not all composted food would constitute a meal (for example, sweet and sour sauce), these numbers do indicate an opportunity for the University to reroute a healthy percentage of catering food waste from the compost stream. Sandwiches tended to end up in the compost. One suggestion would be the implementation of a sandwich bar, allowing clients to customize a sandwich to their liking and allowing untouched food to return to the main kitchen for reuse. Pepperoni on the meat and cheese platter was also often composted. While providing a nice visual balance, the chefs may want to consider lowering the proportion of pepperoni on trays.

On average, clients consumed 61% of the food ordered, with a range of 22% to 83%. Difficulty predicting the number of individuals that will attend an event can lead to surplus of

food left over, particularly in light of societal norms that tend toward expectations of abundance. There exists an opportunity to assist clients in understanding the trends of food consumption and event attendance. Changes could also be made in the way food is ordered so that clients are guided toward making more waste-conscious choices.

Catering Food Waste Redistribution

The following routes have been considered as alternatives to composting catered food waste: 1) client assumes responsibility for food following the event, 2) food is packaged for a food bank, 3) food is offered to UVM students for immediate consumption.

Currently, clients are not explicitly able to take leftover catering food home due to food safety concerns. One option to redirect leftover catering food is to allow clients and their attendees to take leftover catered food home with them. The client may need to sign a waiver indicating their assumption of liability for illness related to improper temperature management of food. A system would need to be established for packaging leftover catering food for clients, particularly since the food takes a variety of forms - salads, soups, sandwiches, sauces, hot meals, etc. Clients may not have interest in taking leftover foods home with them, leaving it to be composted. This option would not negatively impact the volume of catering food composted, but it may not meet the goal of moving up the food recovery hierarchy.

The second option considered for re-distributing catering food waste from compost to human consumption was packaging leftover food for food banks. UVM already donates food from on-campus dining areas to Feeding Chittenden. Several other universities have programs that re-package extra food from dining halls to distribute to community members in need, although none explicitly spoke of leftover catering food. While this option addresses food insecurity, there are several hurdles to this being the top option. First, food safety regulations require food to be consumed within 4 hours of presentation or be properly cooled, with appropriate HACCP documentation. Second, packaging materials and labor would need to be factored into the cost of catering. Finally, a system for moving leftover foods from the event location to the donation location would need to be streamlined, particularly given the fact that catered events happen throughout the day, every day of the week. This may require a designated person to manage food bank donation full-time.

A final option for redirection of leftover catering food would be to provide that food to students on campus for immediate consumption. The benefits of redirecting catering food waste to students on campus would be 1) reducing compost volume, 2) providing free meals to students, 3) assisting food insecure students in accessing food, and 4) raising awareness among students about the issue of food waste. This system would need to consider food safety, communication platforms, pick up logistics, staffing and packaging. Currently, Sodexo has a draft program outline that reads: "Surplus perishable food from a catered event will be available for 30 minutes after the scheduled end of an event, if the entire 30-minute period remains within the 4-hour window to ensure that food is wholesome and safe" (see Appendix C). As it stands,

this policy requires the client to assume responsibility for food safety in order to donate to students following an event.

Several universities across the US have programs that alert students to the availability of leftover food from campus events. These universities were researched by the 2018 Sodexo Fellow Caroline Aubry, whose findings are available in Appendix D. Johns Hopkins University has a "Free Food Alert" system, in which event facilitators utilize a website to send alerts to subscribed students about food available at the conclusion of catered events. Students are given 15-20 minutes to arrive at the event to pick up food. The alert includes information about where the event is located, how much food is available, and at what time it will be removed. Students are able to indicate their intention to pick up food with a "thumbs up" or "thumbs down", so that all alert recipients are able to gauge the number of students responding. This useful metric would allow students to decide if, in the time it takes to reach the event location, there would be enough food remaining to make the trip worth it. Cal State at Fullerton uses an app called "Titan Bites" developed by multiple university organizations including Campus Dining Services, Student Life and Leadership, and Information Technology. Students sign up for the app through their portal and are sent notifications about available food leftover after events. Notifications can be sent by catering staff, campus dining facilities, and some student organizations. Finally, University of Oregon's "Leftover Textover" program sends text messages to students when there is leftover food available on campus, including a location link on the university campus map that students can follow.

Recommendations for Catering Food Waste Redistribution

Based on the data, observations, and research, the following is recommended as next steps:

Short-term
- Share project data and findings with stakeholders, including UVM Dining, Food Insecurity Working Group and UVM's Department of Student Affairs.
- Form a Food Waste sub-group within Food Insecurity to determine and execute next steps in reducing/re-distributing catering food waste on campus
- Survey students on campus to assess interest in having alert system for food leftover after campus events, and to gather feedback and/or ideas on what system would work best on UVM's campus
- Contact universities that currently have a catering food waste recovery program to gather information and advice around program development and implementation (e.g. Northern Arizona University)

Medium-term
- Conduct additional audits of catered events at the Davis Center and other on-campus catering events outside of the Davis Center

- Consider catering options to reduce food waste on the upstream end (ie sandwich bar, portion size, ordering for item totals instead of head counts)
- Consult with UVM and Sodexo legal teams to assess barriers to implementing a catering food alert system
- Assess budget implications of implementation of student access to leftover catering food, including packaging and staffing variables
- Consult with UVM to understand who would be the developer and owner of a potential online platform

Long-term
- Develop pilot program for campus-wide alert system for leftover catering event food
- Hire a campus-wide additional staff person to coordinate across-campus food waste collection and food insecurity

Study Limitations

This project's goal was to provide a baseline understanding of the scope of catering food waste and provide future recommendations based on the findings; however, there are limitations to the findings. First, there is the size of the study. Overall, we audited only 4% of catered events within the Davis Center, or 1.6% of catered events across the UVM Campus. Only one dinner meal was audited due to availability in the fall and COVID-19 restrictions in the spring. There exists opportunities to expand on this data collection in the future, using volunteers, student groups, or integrating class projects into efforts to collect more data, particularly regarding catered events outside the Davis Center. Second, we chose to include measurement of foods that do not on their own constitute a meal, such as sauces. These were included as they can complement a meal (i.e. students would consume chili dipping sauce if they had access to spring rolls), but if their weight constituted a large percentage of food composted for a meal, this may lead one to interpret that more substantial food was composted than actually was (i.e. if 75% of composted food was sauces it may not be prudent to implement a system to redirect that food waste to student consumption). However, weights of sauces and dips are typically lower than of more substantial foods, and therefore may have limited impact on food waste.

Final Thoughts

This project was envisioned by UVM Dining, based on a need to further understand and reduce food waste on campus. The idea for the project landed in the capable hands of Marissa Watson, Sustainability Manager for UVM Dining, who engaged the time and resources of the 2019-2020 Sodexo Graduate Fellow in Food Systems, Susanna Baxley, in project development. While the bulk of the design, data collection, analysis, and report was completed by the graduate fellow, the project was most certainly a collaboration and Susanna would like to express unending gratitude to Marissa for her support, suggestions, and direction. Many thanks must also be given to UVM catering staff and manager, Danielle Burdick, for her help and patience in gathering data. Other individuals that deserve thanks for their contributions of time or knowledge

include Melissa Zelazny, Nicole Reilly, Nate Stevens, Cory Berman, Charlotte Doggett, and all the chefs.

        Few U.S. universities directly address catering food waste, likely due to the complexities of food safety and logistics that must be considered to set up systems to manage it. Through this project, UVM has taken another step toward creating a system that both addresses food waste and impacts food insecurity on campus. The existence of this report speaks volumes about the values and priorities of this university for not only a sustainable food system, but also a just one.

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Appendix A

Table 1: *Example of Calculations for Food Item*

A	Initial weight of food (in container)	13.2 lb
B	Weight of food returned from client (in container)	6.3 lb
C	Weight of food after staff consumption (in container)	5.8 lb

D	Weight of container	4.4 lb
E	Calculated initial weight of food (no container) (A-D)	8.8 lb
F	Calculated weight of food consumed by client (A-B)	6.9 lb
G	Calculated weight of food consumed by staff (B-C)	0.5 lb
F	Calculated weight of food composted (C-D)	1.4 lb
G	Percent eaten by client (F/E *100)	78.4%
H	Percent eaten by staff (G/E *100)	5.7%
I	Percent composted (F/E *100)	15.9%
J	Percent back to kitchen ((A-D)/E *100)	0.0%

Note: The percentage back to kitchen was calculated only for those foods that were returned to the kitchen (i.e. initial weight of food - weight of tray only for the cheese platter that was returned). The weight of the platter was estimated based on previous container weights, as it was not possible to physically remove the food from the container to weigh the empty container. Of the 15 events audited, only 4 events returned food to the kitchen.

Appendix B:

Catered Food Final Destinations

Meal	Date	Percent Consumed by Client	Percent to Staff	Percent Back to Kitchen	Percent to Compost
Breakfast	Nov 1	23	5	64	9
Breakfast	Jan 28	58	25	0	17
Breakfast	Jan 29	62	6	0	32
Breakfast	Feb 13	67	8	0	25
Lunch	Oct 28	75	10	0	15
Lunch	Oct 30	70	4	0	26
Lunch	Oct 31	47	17	0	37
Lunch	Nov 11	62	18	0	19
Lunch	Feb 11	65	6	0	29
Dinner	Nov 13	60	3	0	37
Appetizers	Nov 11	37	30	0	33
Appetizers	Nov 15	83	5	2	11
Appetizers	Jan 27	73	2	20	5
Appetizers	Feb 11	62	21	0	17
Appetizers	Feb 13	22	14	34	30

Created with Datawrapper

Appendix C:

Donation of Surplus Catered Food Protocol – for events that are not Sodexo supervised and potentially hazardous food cannot be held at temperature.

Sodexo takes great care to always provide quality, safe food to our customers. To ensure the continued service of safe foods after Sodexo relinquishes possession of the catered foods for donation, we must adhere to the following guidelines:

Sodexo will verify that the program, as outlined, is approved by the local health authority.

Upon booking a catering event with Dining Services Sodexo catering staff will ask if catering client ("client") wishes to donate surplus perishable food from their event.

> If so, they must reserve the event location for an additional 30 minutes to allow for distribution of any surplus perishable food from the event.
>
> > If the event is not concluded at the end of the meal period (e.g. meeting is continuing), client must determine an appropriate place for students to consume the food in the vicinity.
> >
> > Likewise, if the food will be served in a common area, such as a lobby, client must determine an appropriate place for the donated food to be consumed.
>
> Client must be willing to communicate the number of portions available at the end of the event to the campus representative in charge of the food donation program as well as to the catering manager.
>
> Client must also communicate any allergens noted on the food labeling to the campus representative in charge of the food donation program.

Per Sodexo standard protocols, the time and temperature of the catered food must be logged in the appropriate HACCP logs prior to service at the catered event.

The food must be clearly marked or identified to indicate the exact time that is 4 hours past the point in time when the food was removed from temperature control. This can be accomplished by using a time clock label (Ecolab Food Safety Specialties online catalog on Sodexo Net, item #10280-01-11) or any other effective means of time marking the products.

Sodexo will note any allergens on the labeling at the catered event including milk, eggs, wheat, soybean, peanuts, tree nuts, fish, and shellfish.

At the end of the event, the catering client will communicate the number of available portions to

the campus department responsible for managing the food donation program on campus via text, phone, email as well as the catering manager.

Campus representatives will be responsible for communicating availability of surplus perishable food at catering event, event location and timeline to pick up the food to students experiencing food insecurity with consideration to the number of portions available.

Recipients must be informed that the program is on a first come, first serve basis and we cannot guarantee availability of food to anyone in the program.

Surplus perishable food from a catered event will be available for 30 minutes after the scheduled end of an event, if the entire 30-minute period remains within the 4-hour window to ensure that food is wholesome and safe.

Campus representative must remain at the event for the duration of the donation period to serve the surplus food. This will help to ensure that students are orderly, take only one portion, utilize appropriate utensils and do not take food to-go. This also allows campus representative to gain valuable feedback on the success of the program such as student participation, excess demand vs supply of food, logistics of food location, preference for certain types of food, etc.

Donated food must be consumed at the event site, and not taken to-go. To-go packaging will not be provided.

The sooner of thirty minutes after the scheduled end of the event, or 4 hours after the food has been removed from temperature control, the food will be collected and discarded by Sodexo staff as the event is cleaned up.

Donation Tracking: Collecting data provides important metrics for Sodexo and Stop Hunger as we continue to support some of the estimated 13 million hungry children now, but also invest in programs and partnerships that ensure no child is hungry again tomorrow.

After the event, Sodexo staff must record food donations in the Food Donation Tracking log.

Each month, please report your donations via the Surplus Food Recovery Survey because every action is powerful and beneficial to the fight against hunger.

Appendix D

2018 Sodexo Fellow Caroline Aubry's Research into Catering Food Recovery Models

- John Hopkins University

- ○ Free Food Alert
- ○ Uses a listserv to alert the campus community food is available.
- ○ Typically 15 minute window after an event.
- ○ Students/Staff responsible for bringing to-go containers
- ○ Not advertised before hand
- Cal State Fullerton
  - ○ Helps students in need to find free meals on campus by sending push notifications directly to students when leftover food becomes available
  - ○ Uses app called '**Titan Bites**'
    - ■ It was developed by the university's Auxiliary Services, Campus Dining Services, Student Life and Leadership, Associated Students, Inc. and Division of Information Technology
  - ○ Sign up/ access program through their student account portal
  - ○ Notifications inform them where to go and when on a first come first serve basis
  - ○ Catering, Associated Students, Inc., Student Life and Leadership, and campus dining facility all have access to send the notifications
- University of Oregon
  - ○ Ducks Leftover Textover program
  - ○ The program alerts UO students via text message when there is leftover, free food available on campus.
  - ○ Leftover portions come from campus events where food was ordered from UO Catering, but not all of it was consumed.
  - ○ Texts to announce available food occur in real time—typically with about 15 minutes notice—and include a location link on the UO campus map.
- UMass
  - ○ Catering sales team helps clients match orders to actual needs to reduce the amount of food left over at the end of an event
  - ○ Student food recovery teams pick up leftover food post-event and deliver it to local shelters
    - ■ Works closely with Campus Kitchens
- Harvard
  - ○ Places leftover catering food in a bag
  - ○ Weighs, labels, and freezes it
  - ○ Community partner picks up frozen bags a few times a week
- Brown University
  - ○ Partnership with the Food Recovery Network
  - ○ Students pick up left over food and deliver it to local shelters