



**UCLA** Sustainability Action Research

# Food Team 2018 Midterm Report

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## **Stakeholder :**

Charles Wilcots, Associate Director of UCLA Dining Services

## **Abstract**

Our project is based on the belief that excessive food waste at UCLA is largely due to students' lack of awareness on the issue. Our stakeholder, Charles Wilcots, wants us to address this matter by raising the overall awareness on this persisting problem, engaging with students regarding this issue, and quantifying the decrease in the amount of waste created. Essentially, by working collaboratively with our stakeholder and implementing effective food waste mitigation procedures, our team is assured that the food waste issue occurring in the UCLA Residential Restaurants can diminish.

Throughout this project we will focus on education and outreach to inform students about food waste occurring at the UCLA Dining Commons, and conduct research on changes in students' food waste behaviors. By conducting food waste audits and surveys in the UCLA Dining Commons, we intend to gain a better understanding of student knowledge about food waste. After acquiring a general idea of students' knowledge of food waste as an ongoing issue, we will focus our direction on implementing informative signage with nutritional information and tips to reduce food waste. Furthermore, our team is planning an outreach event to increase student understanding of food sustainability. After the multifaceted educational aspect of our project, we will perform additional food waste audits and measure the quantitative impacts of our educational initiatives. We want to analyze whether food waste education does in fact have an impact on students' dining behaviors.

## **Introduction**

In the previous years, there has been a number of Sustainability Action Research (SAR) teams that have been dedicated to addressing food-related sustainability issues on campus. Yet, the complex and daunting task of confronting and minimizing food waste requires a long-term and comprehensive approach. As early in the program as 2009, the Waste Watchers team sought to quantify and reduce post-consumer food waste in the De Neve residential dining facility. Waste Watchers had previously existed as a student-led initiative since 2007, conducting a total of ten food waste audits (Winner et al.). The team discovered that the side dishes that accompanied the meat entrees, including rice and mashed potatoes, were often discarded by students (Winner et al.). In response, UCLA Dining eliminated some completely, modified portion sizes, and included an option to take an entree by itself (Winner et al.). Waste Watchers also advocated for reminders for students to customize their orders which were displayed on the menu at each serving station (Winner et al.).

The 2014 Sustainable Food Systems Team (SFS) measured food waste in Covell and Feast and compared their results to those obtained by Waste Watchers in 2009. Findings from their first set of waste audits indicate that carbohydrates and side dishes were the most wasted foods (Sanchez et al.). The team also discovered that eating habits had not changed since the conclusion of Waste Watcher's research in 2009; almost three slices of bread worth of food was still being wasted daily (Sanchez et al.). As part of their educational outreach, the team sought to raise awareness of the linkages between food waste, water, and climate change.

The 2017 food team focused on analyzing demographic trends among diners and found there to be noticeably more food waste amongst certain patrons, such as those who had no allergies (Johnson et al.). The results of the focus group they had conducted suggests that students were most receptive to visual signage and media (Johnson et al.). With that in mind, the team created a short film and memes to communicate the issue of consumer food waste in the dining halls (Johnson et al.).

In a study conducted at Kansas State University, researchers implemented educational awareness programs aimed at reducing food waste, and analyzed the effectiveness of various types of signage and messaging. The researchers created a baseline by collecting data on food waste. They tracked the trays of participants in the study, and the edible food waste from the trackable food trays was collected and compared to the total amount of food waste. This baseline was required, to allow the researchers to track the impact of their messaging on food waste. Next, they implemented two methods of messaging: simple message interventions and more personal feedback interventions. Finally, in order to determine the effectiveness of the message interventions, researchers asked diners to voluntarily complete a questionnaire. The results of the study showed that explicit and informational messaging led to a 15% reduction in food waste, while the more personalized, feedback-based messaging was not as effective (Whitehair et al.). Since this study highlighted the effectiveness of educational campaigns, more resources and research must go into determining the most influential formatting practices for messaging. This includes comparing the messaging medium, such as digital versus print, and the

terminology used to convey the message. Finally, Whitehair et al. (2013), suggests the importance of fostering environments where students feel compelled to incorporate and discuss sustainability in their everyday lives.

By interacting with student diners and focusing on influencing their food waste behaviors, past SAR teams have shown that food waste is a issue that can be successfully mitigated. The study conducted at Kansas State University showed that message interventions, especially simple messages were effective in reducing food waste. Our team intends to continue the efforts of former SAR Food Teams by using effective signage to educate students about food waste and ultimately decrease food waste.

## **Methodology**

When developing this research project, the overarching goal was very clear: find a way to reduce the amount of food students are wasting in the UCLA Dining Facilities. From there, we had some decisions to make as far as how to do this: what would our chosen scope be? Our stakeholder and the Associate Director of UCLA Dining Services, Charles Wilcots, was very helpful in giving us the resources and knowledge we needed to make these decisions and narrow down our project. After hearing about what our Stakeholder has observed in the dining halls, we learned that the amount of food being wasted this year has increased disproportionately in comparison to the increase in the number of residents living on the Hill. Based on this observational evidence – and on the data collected from previous SAR Food Teams – we decided to

focus on the food consumption habits and waste reduction in UCLA Restaurants on the Residential Hill. We narrowed our scope to just the Residential Hill in order to keep our efforts centralized and efficient, presuming that the sustainable food consumption behaviors learned while students live on campus would proliferate even when the students move off of the residential hill.

The next obstacle we faced was trying to figure out how to increase sustainable food consumption behaviors among students in UCLA dining restaurants. Mr. Wilcots shared with us that many involved with UCLA Dining Services are under the impression that current excessive food waste behaviors are the result of a lack of education or awareness among students regarding the problem of food waste and its impact on the environment. The idea of an all-you-can eat dining hall – that is relatively expensive - leads to the excessive consumption and wasting of food due to an unlimited number of options and focus on getting one's money's worth. With that, we decided to break down the focus of our project into two parts: 1) make students aware of the magnitude of their food waste and the subsequent environmental impacts of their actions, and 2) provide students with education and tips on how they can implement impactful action to decrease their individual food waste.

In order to reduce the amount of consumer food waste in the UCLA Dining Facilities, the motives behind student food waste must be better understood. Therefore, we decided to hand out two-hundred surveys – 100 in B Plate Dining Facility and 100 in De Neve Dining Facility i.e. 200 in total - to better comprehend student behavior in the Dining Facilities. One of the focuses of our survey was to uncover the effectiveness of

including nutrition and mindful eating into our educational outreach. Based on the survey data, the majority of respondents thought the inclusion of calorie counts on the electronic signage in the all-you-can-eat dining facilities would lead to them taking less food and therefore wasting less food. Moreover, respondents indicated that the two most important factors in influencing their food choice was first taste and then nutrition. The data collected on student preferences and behaviors will be used to inform the educational outreach programs that we plan on launching throughout Spring Quarter. We plan on implementing signage in the Dining Facilities, hosting an outreach event on the Hill, and facilitating nutritional and mindful eating seminars.

In addition to handing out surveys, collecting data, and utilizing the data to help design an educational program, we also conducted four Food Waste Audits in both De Neve Dining Facility and B Plate Dining Facility. Initially, we wanted to quantify food waste by weighing it, but since UCLA does not have a scale of that size that we could use, we had to adjust our methods. We decided to quantify food waste based – but slightly adjusted - on the methods utilized by the 2017 SAR Food Team. The measurement scale created was visual and incorporated a scale from zero to four. Zero represented no food waste and four represented a full plate of food waste (i.e. 2 represented  $\frac{1}{2}$  of a plate wasted and 3 represented  $\frac{3}{4}$ ths of a plate wasted). Based on this scale, we were able to calculate that half a plate of food is wasted per student per meal period. One important note is that fruit rinds, napkins, and any inedible sources of waste were not included in our measurements.

In order to ensure consistency and accuracy in our process, the audits were conducted on two Wednesdays and two Fridays from 5pm to 7pm during dinner time. Groups of two to three Food Team members waited in the dish-drop area of the dining facilities and evaluated the plates of one out of every three diners. Additionally, those conducting the audit would practice the scale before beginning data collection in order to calibrate their measurements.

### **Challenges and Difficulties**

Throughout the quarter we faced several challenges, but used different methods to quickly overcome them. Since many previous SAR teams had already done research on food waste, we ran into the issue of finding a way to compromise between differentiating our project and building on previous research. We wanted to approach the issue of food waste from a new perspective, but we also thought it was valuable to continue collecting quantitative data on the amount of food being wasted. Ultimately, we compromised by adding a component on nutrition and focusing our project on education, while still conducting audits to collect data on the amount of food being wasted.

Another challenge was finding a way to quantify food waste. We originally wanted to use a scale to weigh the amount of food being wasted by students. This method would have been optimal, because the process is relatively simple and the data is objective. However, we were unable to get a scale for this purpose and had to find another way to measure the amount of food being wasted. Instead, we adopted a



method that was similar to that of last year's food team, where they rated the amount of food wasted on peoples' plates by using a number scale. Instead of taking pictures of students' plates, we stood in the tray return area and rated students' plates as they passed. We also changed the rating slightly, to be from 0 to 4 instead of 0 to 3. While this rating system is optimum for our new methodology, it may be somewhat subjective because it requires an almost instantaneous rating of the dishes. Team members may also rate similar amounts of food waste differently. In order to minimize subjectiveness in the ratings, we met up as a team before audits to practice and standardized our ratings. In addition, we had at least two team members present at each audit, so that they could come to a consensus on each rating. Accurately rating the plates is an issue that we will face again when we conduct our audits next quarter, but the practice and experience we gained this quarter will help us make the ratings more standardized and improve the process overall.

The final main challenge that our team faced was getting approval for handing out surveys during the food waste audits. The surveys were pivotal to obtaining an understanding of food waste from the students' perspective. Initially, the audits and surveys were only approved by UCLA Dining Services, because we were under the perception that UCLA Dining Services was the only group needed to approve our survey. However, a few days before our scheduled food audits, it came to our attention that we also had to receive approval from UCLA Residential Life in order to pass out surveys in the dining halls. After emailing them, we were able to get approval from them and successfully to move forward with our project. This is also an issue we will have to

work through next quarter as we begin the educational component of our project. The educational aspect of our project involves coordination between many groups, so we must make sure our projects get approved by all the necessary parties. Now that we have the appropriate contacts, we can effectively complete our project's goals.

### **Plans for Spring Quarter and Conclusion**

After gathering preliminary research about food waste and student awareness, the Food Team will switch its focus to educational aspects for Spring quarter. Student input compiled from surveys has let us narrow the focus of our educational campaign. 34.4% of students indicated that out of five options, encouraging meal customization was the most effective way to address food waste in dining commons. As a result, we will be installing signage promoting student customization of their meals in dining halls. From our research and survey results, we have also posited that by making students aware of what they are consuming, students will reconsider grabbing extra plates of food that are unhealthy or that they may not need. By increasing nutritional awareness by posting the nutritional information and calories of meals served at dining commons, we will simultaneously encourage healthy dietary habits for students and hopefully decrease food waste.

The Food Team will also be organizing an educational outreach event located on the Hill to increase student awareness of food waste. While our plans are not cemented yet, there will be both interactive and visual components to the event. The interactive component will feature a quiz about food waste and nutritional awareness. Utilizing

funds we secured from The Green Initiative Fund, we will have food catered, most likely from the popular Westwood restaurant, Veggie Grill, as a reward for participating and completing the quiz. Our plan for the visual component is to obtain a days worth of food waste from one of the dining commons and placing it in a pile or in garbage bins, allowing passing students to conceptualize how much food is physically wasted in a day.

Ultimately we hope our signage and outreach can increase students' awareness about food waste and nutrition, leading to a decrease in the amount of food wasted. In order to quantify the effectiveness of our campaign, we will conduct another round of audits after our efforts have been completed. By doing so, our team will be able to observe if our educational outreach efforts did in fact affect how much food is being wasted by students. Virtually, our team's ambition in mitigating food waste in the UCLA Residential Restaurants is one that not only requires dedication on our part, yet is contingent on the fact that UCLA students can resolve sustainability issues themselves, as long as they embrace the notion of being aware of their actions. Through our team's efforts in reducing food waste, we anticipate that the food waste issue within the UCLA Dining Commons will decrease and essentially become a problem that no longer persists.

## Works Cited

Johnson, Destiny, et al. *Assessment of Food Waste Behaviors in UCLA Residential Restaurants*.

2017, *Assessment of Food Waste Behaviors in UCLA Residential Restaurants*.

Sanchez, Joseph Martinus, et al. *Sustainable Food Systems Final Report*. 2014, *Sustainable Food Systems Final Report*.

Whitehair, Kelly J., et al. "Written Messages Improve Edible Food Waste Behaviors in a University Dining Facility." *Journal of the Academy of Nutrition and Dietetics*, vol. 113, no. 1, 2013, pp. 63–69.

Winner, Heidi, et al. *Action Research Team Waste Watchers University of California Los Angeles*. 2009, *Action Research Team Waste Watchers University of California Los Angeles*.

## **Appendix**

### *i. Survey*

#### **UCLA Dining Common Survey - SAR 2018**

Which meal plan do you have?

19P    19R    14P    14R    11R

What year are you?

1st    2nd    3rd    4th    Graduate    N/A

Do you have any dietary restrictions?

No

Yes \_\_\_\_\_

The most common food type that I waste is/are (circle all that apply):

- a) Desserts (Pastries, Ice Cream)
- b) Vegetables/Fruits
- c) Protein (Meat)
- d) Carbohydrates (Pasta, Pizza, Grains)
- e) Others \_\_\_\_\_

The most important factor in my food choice is:

- a) Taste
- b) Nutrition
- c) NA - I just want to satisfy my hunger
- d) Line Size

I am \_\_\_\_\_ of the nutritional value of the food I consume:

- a) Very aware
- b) Vaguely aware
- c) Unaware

Would calorie count/nutritional content on signage in the dining hall impact how much food I would take?

- a) Yes
- b) No

I would waste less food if (circle all that apply):

- a) I knew I could customize my meals
- b) The food tasted better
- c) I had gotten my food in multiple stages
- d) The portions were smaller
- e) The lines were shorter

I think that food waste is an issue at UCLA Dining:

- a) Yes
- b) No
- c) I'm not sure

Rate in order of effectiveness ways UCLA Dining can reduce food waste:  
(1=most effective, 5=least effective)

- \_\_\_\_\_ Using signage to remind students not to waste
- \_\_\_\_\_ Making portion sizes smaller
- \_\_\_\_\_ Encouraging students to customize their meals
- \_\_\_\_\_ Hosting a focus group/nutrition class for students every quarter
- \_\_\_\_\_ Providing incentives for students who do not waste food

When do you go to the dining hall?

- a) I go to the dining hall at roughly the same time every day.
- b) I go to the dining hall when I feel hungry.
- c) I go to the dining hall at random times, and somewhat erratically.

Who do you go to the dining hall with?

- a) No one. I usually eat by myself.
- b) A group of friends.
- c) One or two friends.

On average, how many plates of food do you get during one meal?

\_\_\_\_\_

ii. Food Waste Rating Scale



0



1



2

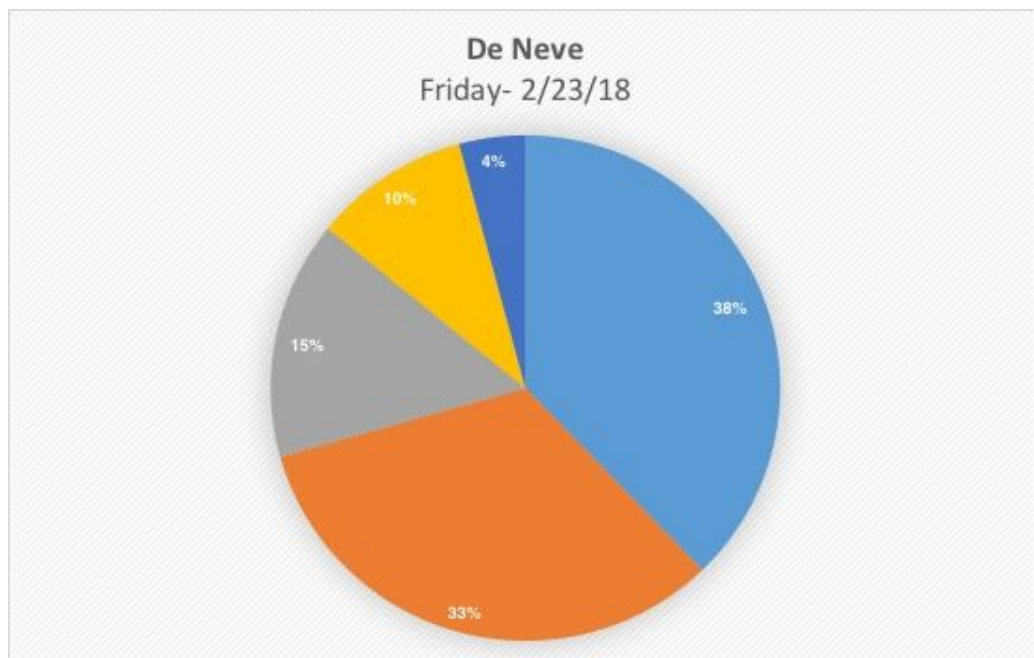
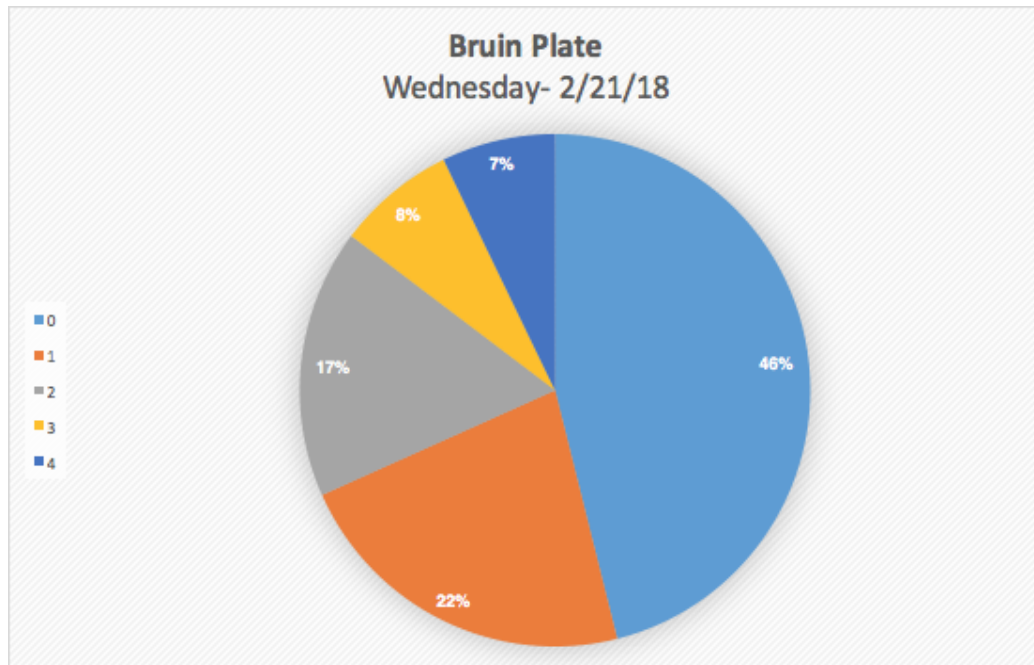


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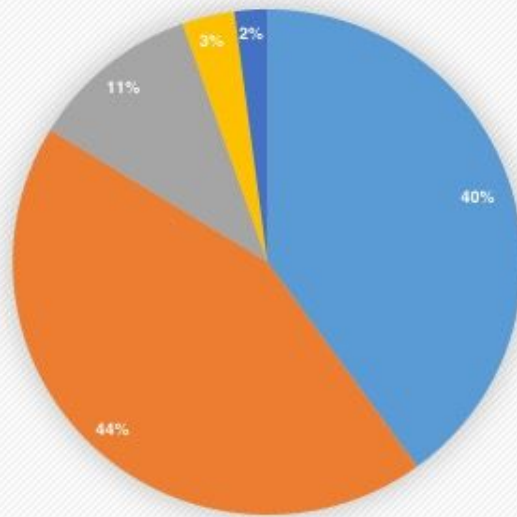
4

iii. Food Waste Audit Data





**De Neve**  
Wednesday - 2/28/18



**Bruin Plate**  
Friday- 3/2/18

