

ETSAW DOOF

Kelsey Witherspoon, Sara Farhat, Samantha Xiao, Brandon Curley

HCDE 518C

Adi Azulay

# User Research & Personas

## User Research Summary

### Stakeholders

The stakeholders for our design question are:

- Primary Stakeholder
  - **UW food services market and cafe management:** Non-student employees in UW food services management roles who manage market or cafe operations. Titles include Manager, Assistant Director or Director. This does not include UW food services managers who **only** manage “hot” food locations (ex. dining halls), although some managers may manage both “hot” food and market/cafe locations.
- Secondary Stakeholder
  - **UW food services market and cafe staff:** Any employee working at a UW food service market or cafe. These include student staff, student coordinators and non-student non-management staff.
- Tertiary Stakeholder
  - **UW food waste recovery coordinators:** UW student volunteers who pick up and donate designated food waste from select UW dining locations (dining halls and some markets and cafes).
- Served Stakeholder
  - **UW food services market and cafe customers:** Anyone browsing or buying an item from a UW food service market or cafe. These can be students, professors, other UW staff or visitors to UW’s campus.

## Summary of Methods

### Contextual Inquiry (N=6)

Contextual inquiry allows us to observe the users in the context of their environment. It allows us to observe and listen to the users while they are performing their work which in turn helps us understand their wants, needs and pain points.

The reason we chose this method is because these observations and inquiries will help us form a better understanding of the problem and ways we can address it. It is also a great way to break down assumptions and surface patterns that the user might not find important to mention during an interview. In particular, this method offers additional insight into the **behaviors** of our

users instead of solely relying on what they say they do. We chose to follow student coordinators and store managers for this research since they most often are responsible for checking and disposing of expired food from the store shelves.

### **Interviews (Managers N=4, Staff N=4, Food Recovery Coordinator N=1)**

Interviews allow us to collect qualitative data on a specific topic in the form of a purposeful conversation through a series of questions and answers between an interviewer and one or more interviewees. Interviews are particularly useful when additional probes are required to better understand the research subject's thoughts and feelings regarding the research topic.

For this project, our team chose interviews as a research method in order to get a deeper understanding of the end-to-end process for managing food waste at UW and to discover our user's goals for our personas. We also chose this method because it is attitudinal and so complements the behavioral insights we collected during the contextual inquiry. Thus far, we've collectively conducted nine in-depth interviews (virtually or in person) with UW food services employees including UW food service managers and directors, student coordinators, and student staff from several different locations across the UW campus. To keep the interviews informal, we adopted the semi-structured approach to our interviews by asking a set of predetermined questions followed by unstructured probing questions to further explore underlying reasons while keeping the conversational flow. By interviewing managers and employees of multiple UW food services locations, we aim to 1) discover and understand the stakeholders involved in the management of the food waste process, 2) gain a qualitative understanding of the pain points, bottlenecks, and needs in the current process, and 3) find patterns and inefficiencies in the process across different food services locations at UW.

### **Secondary Research**

To accompany our contextual inquiries and interviews with staff and managers, we also chose secondary research as one of our methods. We chose this method because - unlike the others - we were able to collect data independently and asynchronously. We did not have to rely on the tight schedules of the UW market staff to learn more about how grocery stores and cafes are currently managing food waste outside of campus. We conducted this method before we conducted many of our interviews and contextual inquiries as it allowed us to better understand both the terminology and overall process for inventory management at grocery stores. Having this information before speaking directly to staff allowed us to come prepared with more direct questions and understand what the staff were telling us. Additionally, none of us were familiar with the inventory management process at a grocery store, so this gave us a stronger understanding of the cycle from ordering to sales or expiration.

When conducting our secondary research, we first started with high-level research papers and news articles around grocery store food waste, generally, and food waste at UW, specifically, to get a baseline understanding of the problem. Then, we tried to look beyond the high-level papers written by highly-educated professionals and environmental activists and sought out first-hand accounts from individual grocery store managers or staff, as they were our main

stakeholders. We found these firsthand accounts via podcast interviews (such as NPR's "Planet Money") and through online forums (such as Quora) where former and current employees would openly and anonymously talk about their experiences. This allowed us to better understand the honest user pain points of the employees in their everyday jobs as they were able to speak freely without fear of upsetting management. We were able to read through a variety of posts from users across grocery stores of all different sizes to understand how the process for managing food waste varied by store and where the overlaps were.

## Summary of Findings

After synthesizing our learnings from secondary research, contextual inquiries and user interviews we codified a set of insights about our end user and the food waste process at UW food service facilities. In order to understand our insights about the food waste process for UW food services markets and cafes, it's essential to understand the general process for food waste at independent markets so we've shared this process as a primer for our more specific insights in this space.

Our secondary research uncovered that any food waste process at a small independent market is primarily built to be a data feedback loop to optimize the store's inventory and ordering system. The typical feedback loop is follows: 1) Place an order 2) Receive a shipment of items 3) Scan the received items' barcodes to upload the data into a digital inventory management system 4) Stock the market or deli with the items 5) Manually check inventory to record stolen, damaged or expired items in the waste log 6) Manually enter waste log data into the inventory management system 7) Use a POS system to collect data on items sold during checkout 7) Dispose of expired items by donating, throwing away or giving away to employees 8) Analyze existing sales data, available inventory, and numbers from the waste log order to inform the next order where the process starts over again.

Based on this initial understanding of the food waste process at small independent grocery stores we were then able to narrow in on insights from our contextual inquiries and interviews to get a more in-depth understanding of UW food services processes and our end users. **First**, we learned that the **process for checking for expired or wasted foods** is a manual, laborious and time sensitive task for the UW food services staff. Similar to what we found during secondary research on small independent grocery stores, the UW food services process requires staff to visually check expiration, sell by and best by dates. Without tracking through traditional bar-codes, the process remains analog, manual, and prone to error. Also, because of the manual process, oftentimes stakeholders who are responsible for checking the food skip checking all of the items and make assumptions on freshness based on surrounding food's expiration dates (potentially leaving expired food on the shelves). Although this process is incredibly manual, most employees see it as a "necessary evil" within the food services industry.

Not only is the process of checking for expired foods extremely manual, but it is also incredibly time sensitive as stores want to optimize a food's shelf life but food must be taken off

shelves immediately once expired. There are also variable time windows associated with how the food will be disposed of, with specific timeframes for “re-using” the food (ex. cooking raw chicken) and donating the food. Stores not only have to work across multiple time windows but also across a huge range of expiration dates that vary based on store location (ex. some throw sushi away every night, some follow expiration dates given) and the type of food being sold (ex. bakery items vs. sushi). All of this culminated in a complicated and complex process for managing and tracking the timing of expired foods that is nearly impossible to manage manually. Although there are “manual” methods to track food timelines, such as the FIFO (First in, First out) method, training is often lacking for this process among UW food services staff members.

**Second**, we found that the **recording step of the food waste process is a major pain point** for our users both because the systems are “siloeed” and because the food waste log is inefficient. UW food services has multiple separate data collection and recording systems (ordering system, waste log system, inventory management system, and POS checkout system). Recording systems can also differ based on the type of food (ex. no inventory management system for prepared foods) and the end data output (over purchasing log vs overproduction log). Since all of these systems are different platforms the systems are often siloeed in their use at UW food services locations and do not have compatibility for communication across the systems. This in turn, increases the amount of time and effort UW food services employees must put in to track their food waste data.

Outside of the lack of between systems, the waste log is a particularly thorny system for our stakeholders. Waste logs are used to monitor trends in UW markets and cafes for two key reasons: 1) to calculate the ideal waste percentage, a metric that managers monitor and are evaluated on and 2) to predict and inform ordering decisions for suppliers. However, these logs remain manual, analog (multiple paper waste logs that have overlapping measurements) and repetitive for the food location staff. Additionally, much of the information (ex. weight) is inconsistent, because it is not listed on the packaging and sometimes has to be estimated by the staff member. As an additional complexity to the process, each location’s store manager creates their own waste log template creating a lack of consistency in the overall waste log data. Although management has tried digitizing the waste log system by replicating it in Google Sheets, past attempts have failed because Google Sheets has poor usability on a mobile device.

**Third**, we observed a **lack of consistency within the food waste processes across UW market and cafe locations**. Since each manager sets their own process for expired foods, each location has a different process for when to check for expired foods, what food to check and how to dispose of the food. Most of these processes lack an SOP or checklist for staff to review which leaves the process open to error (ex. Interviewer: “What about the noodles?”, Student Coordinator: “Whoops forgot about those”) and inconsistency across staff. The disposal of food waste is also inconsistent across locations because of different processes across locations, but with food disposal there is also inconsistency within locations (from employee to employee) as the disposal process is usually “universally understood” through staff word of mouth. There are six key paths for disposing of foods at UW, but with each of our interviews and contextual inquiries (even within locations) we did not find one universal set of guidelines or process flow for how

exactly to dispose of UW market and cafe food. For reference, the six possible disposal options are: donating, throwing away, composting, giving to student staff, re-using food (i.e. cooking food like chicken that may go back to shelves make prepared foods), or transferring between locations (i.e. from locations not open on weekends to locations open on weekends).

Last, we discovered that in the markets and cafes, **prepared and perishable foods pose a more significant food waste problem for UW food services than packaged foods**. Most of these foods are thrown away on a daily basis and must be checked for expiration dates more frequently (often at the beginning or end of shifts) since these items typically have a shorter shelf life. The UW student staff find the sushi prepared food particularly frustrating to deal with since it contributes the most to food waste at the markets and cafes where it is sold (customers simply aren't purchasing refrigerated sushi) and the expiration dates can be especially tricky since expiration dates are in date and time (typically expired at midnight or 2pm the following day). Also, since some of the prepared and perishable foods are packaged on site (ex. baked goods and produce) some don't have barcodes and must be checked manually whether they have "gone bad" or given estimated expiration dates, leaving the process open to interpretation and thus human error.

Overall, our research generated a solid groundwork of insights for the upcoming ideation and solutioning process. With these findings we have a better handle on the UW food services management and staff for markets and cafes and on the problem space to help improve the efficiency of food waste at these locations.

## Design Requirements

Our solution should:

- Reduce the amount of time and effort it takes for staff to check for expiration dates
- Reduce human-prone errors in the label-checking process
- Capture and monitor data and trends of food waste on a weekly, monthly, annual basis
- Be proactive in identifying and notifying staff about expiring food before it has spoiled
- Provide clear checklists/to-do's for opening and closing staff as they manage expiring food
- Integrate and communicate seamlessly with existing tech infrastructure (inventory management system and, point of sale system)
- Be mobile friendly so that staff can check for and handle expiring food while working on the floor
- Recommend the optimal way to handle different types of food that are expiring (donate, compost, throw out, cook, transfer, give to students)
- Help managers standardize their processes across the different locations that they manage
- Be able to communicate with the local food donation services (i.e. UW Food Pantry)
- Reduce the effort required to track expiring prepared/ fresh foods (perishables)

## Refined Design Question and Explanation

**Refined User Question:** How can we equip UW food market employees with the means to better manage perishable foods?

We narrowed the scope of our question to specifically focus on food market employees that manage perishable food instead of general food service providers that manage all different types of food (both perishable and packaged). This was informed by our research, where we found that prepared and fresh foods posed the biggest challenges to employees given their lack of clear labels and short shelf-life.

# Personas

## Tad Gutierrez Primary

### Biography

Tad is a General Manager for UW's West Campus food services system. Tad has always worked in food service since a young age, starting out as a server and working his way up into manager roles at local Seattle restaurants. He's passionate about customer service and operational efficiencies. He cares about the well-being of his employees. He is often juggling tasks across different locations on West Campus.



*"I have to balance keeping customers happy while also doing our part to reduce food waste"*

**Title:** Manager  
**Age:** 35  
**Location:** Off-Campus Seattle area  
**Education:** Bachelor's Degree  
**Decision Maker:** Yes

- Food Operations Expert
- Problem Solver
- Busy
- Multi-Tasker

### Goals

- Managing customer and employee satisfaction while maintaining environmentally conscious processes
- Managing day to day operations of Food Services locations
- Ensures store profitability using data trends and metrics
- Establishes consistent processes across locations.

### Frustrations

- Micromanaging employees
- Data entry is manual from wood waste log
- Food Services systems don't speak to each other
- Hard to predict demand for purchasing decisions
- Imperfect data
- Employee training on food waste logistics

### Technical Skills



### Experience

- 15 years in the food service industry:
  - 5 years as a server at Tutta Bella
  - 6 years as a Deli Manager at QFC grocery store
  - 4 years at UW Food Services

## Biography

In High School, Lincoln regularly volunteered at the University District Food Bank because he is passionate about reducing food waste. During High School he also worked a part-time job as a Starbucks Barista after school to make some extra money to go towards college. When he arrived at UW he immediately began working as a Barista and Cashier at the Etc. Hub cafe. He excelled in his role as a barista because of his customer service oriented attitude and strong communication skills. Lincoln is an expert in the layout, processes and tasks for the Etc. cafe and was offered the role of a Student Coordinator in his Senior year.



*"I just know what is out of stock and when the restock is needed."*

**Title: Student Coordinator**

**Age: 21**

**Location: On campus UW housing**

**Education: Undergraduate Student in Biology**

**Decision Maker: No**

Student

Busy

Multi-task

Good communicators

Environmentally Conscious

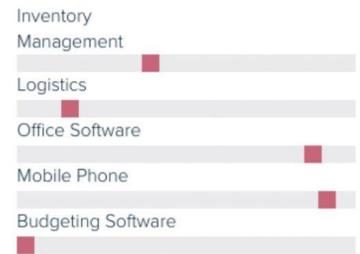
## Goals

- Ensures that tasks are done properly and other student staff understand their role.
- Focused on customer service satisfaction.
- Log food waste at the end of their shift.
- Student leader during open hours
  - Oversees training of student employees.
  - Helps manager make purchasing decision based on inventory on-hand.
  - Bridges the communication gap between student staff and Managers.
  - Bubbles up relevant feedback to Managers.

## Frustrations

- Repetitively having to check the expiration labels and log records in the waste log daily
- Expiration labels and dates are complex for certain food categories
- He sometimes forgets which foods to check because he doesn't have a checklist
- Managers not listening to student concerns over food waste.
- The food waste template requires repetitive actions and is time consuming.
- Taking stickers off of all plastic containers before disposing in compost.
- Not enough help to keep up with demand

## Technical Skills



## Experience

- 5 years in the food service industry:
  - < 1 year as Student Coordinator at the Etc. Hub Cafe.
  - 3 years as a Barista at the Etc. Hub Cafe
  - 1 year as a Barista at Starbucks in High School

## Biography

Rosalinda just moved to Seattle to attend UW and currently lives in the UW Oak dorm. She got her first job at UW at the UW District Market to help subsidize her living expenses. As a new employee, she is eager to learn but also nervous to make mistakes. She wants to make a good impression on the Manager and Student Coordinator. She hopes to continue working at the District Market for the full four years that she will be a student at UW.



*"The food logging process is overwhelming and I often find myself adding additional rows to the template"*

**Title:** Student Assistant

**Age:** 18

**Location:** On campus UW housing

**Education:** Undergraduate Student in English

**Decision Maker:** No

Student

New to UW

Budget conscious

Learning the ropes

Part-time employee

Multi-tasker

## Goals

- Working part-time to supplement living expenses
- Restock the shelf using the FIFO (First In, First Out) method
- Works as a cashier, helping the customers purchase and bag their items
- Providing excellent customer services to visitors

## Frustrations

- Still learning all of the tasks associated with expired foods, would prefer a checklist to remind her
- She often has to catch expired or "bad" foods during checkout:
  - Produce, especially strawberries, are often infected with diseases
  - Often produce is bruised or damaged
  - Expired foods such as milk or prepared foods are discovered during checkout, especially during the summer season.

## Technical Skills



## Experience

- 2 years in the food service industry:
  - A few months as a Cashier at District Market
  - 1 year stocking shelves at QFC

# Appendix

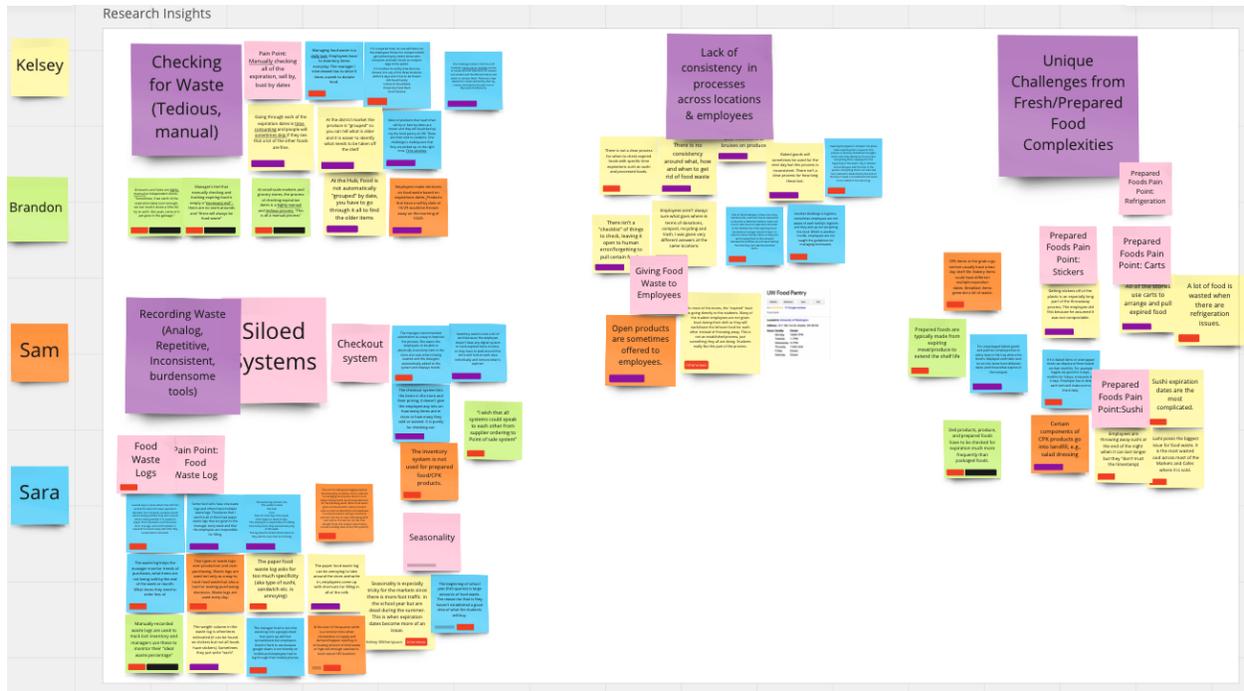
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## Interview Questions

- Tell me more about your role and responsibilities in the store? (Goal to get personas)
  - What is your work process?
  - How do you work?
- Tell me more about the process your store uses to manage expired foods?
  - (Probe) How do you track expiration dates for different food types (prepared/packaged,etc.)?
- Tell me more about the process your store uses to manage food waste?
  - (Probe) Do you keep track of food waste and why? How do you track it if so?
  - (Probe) Tell us more about the inventory management process.
  - (Probe) Why is this the current process?
  - (Probe) Tell me more about the waste log you use:
    - 5 whys
  - How are you using the waste log?
- What do you like about the current process for managing your store's food waste? Why?

- What do you find most challenging about the food waste process? Why?
- If you had a magic wand and could change one thing about the process, what would it be and why?
- How often are you monitoring the food waste log?
- How often are you pulling expired foods from the UW markets?

## Findings Synthesis Miro Board



## Secondary Research

In the U.S. alone, 35% of all food goes unsold or uneaten – almost 90 billion meals’ worth of food annually ([refed.org](http://refed.org)). At UW specifically, 14% of our landfill is filled with food waste ([green.uw.edu](http://green.uw.edu)). Today, the burden of managing the expiring food on the shelves of grocery stores and quick-service restaurants (QSRs) often falls on employees. In fact, most supermarket employees use some combination of tedious, visual checking and managing Excel spreadsheets to remove or discount expiring products on their shelves ([Yoobic.com](http://Yoobic.com)). The financial impact is also significant, as almost two-thirds of grocery “shrink” (inventory purchased but never sold) is attributed to perishable and production departments including deli/meat, bakery, seafood, and dairy ([Agilence.com](http://Agilence.com)). With strict laws around expiration dates and food donation policies, most food services are unfortunately forced to throw out food that reaches its sell by date - even if it’s still technically edible.

In an example from NPR's Planet Money podcast, a journalist (Sarah Gonzalez) interviews an independent grocery store owner (Cory Thompson) who "thinks out loud" as he manually has to check the date on each carton and pull those that expire today while also doing the mental calculus to decide how many he should leave on the shelf that could still sell today: "Cory grabs all the cartons with today's date except one. Maybe someone will still buy it." He also mentions that, "Sometimes, if we catch it (the expiration date) soon enough, we can mark it down a little bit, try to sell it. But yeah, some of it just goes in the garbage."

The case of Cory Thompson reflects the reality behind the pain points many independent grocery store or market owners face, such as:

1. Expiration dates that have to be checked frequently and manually, as they are not tracked on traditional bar-codes.
2. Owners have to guess what expiring food will sell that day or not.
3. Discounts are applied manually and arbitrarily, if at all.
4. If there aren't ways to recycle or repurpose the food, it goes in the garbage and contributes to their inventory shrinkage.

Because expiration dates are not embedded in all types of barcodes in the US, the process remains analog, manual, and prone to error ([Matvett](#)). Additionally, after scouring a variety of chat forums with previous or current grocery store employees, it's apparent that the process for managing expiring food varies widely at the store level. According to one former employee, big-box grocers tend to have more advanced inventory management software that is able to track expiration dates for items once they are delivered from the supplier and even notifies employees when items on the shelf were nearing expiration so that they could be discounted ([Quora](#)). Smaller, independent stores like Cory Thompson's do not have this operational luxury and rely on manually checking dates and ensuring that first-in products are always the first out (FIFO). Given that the markets and grocery stores run by UW are not connected to large chains, they likely face some of these same issues. While this process is manual, one former grocery store manager said he took pride in the process to ensure food safety standards were met ([Quora](#)). Additionally, his account details how managers are often subjected to audits that can impact their performance bonuses, so they were always incentivized to be thorough with their manual checking processes.

To better manage food waste means to better manage your inventory. Based on our research, we identified the different stakeholders and overall process/lifecycle for how a typical small grocery store manages its inventory. First, the order coordinator is tasked with placing the order with the supplier, where they must consider the volume, type, and shelf-life of items. Next, they receive the shipment at the store in the loading dock, where they then scan the barcode of items received which uploads them into the digital inventory management system. Next, staff are responsible for taking these items and placing them on the shelves or in the deli. Throughout their shelf life, the staff have to take manual inventory of the store to account for stolen or spoiled/damaged items on a regular basis and record them in a waste log. They manually update the inventory system with these numbers. If an item has reached expiration, it is either donated or thrown away or given to employees. If it is sold at the Point of Sale system (POS) it is recorded in

the sales data and removed from the digital inventory management system. The process then starts over with the order coordinator, who uses the sales data, available inventory, and numbers from the waste log to optimize what they order.

## Secondary Research Resources

- <https://www.harvardmagazine.com/2021/emily-broad-leib>
- <https://qz.com/1082213/walmart-nestle-and-other-food-companies-are-changing-labels-to-fight-food-waste/>
- <https://green.uw.edu/blog/2019-08/reducing-food-waste-uw>
- <https://agr.wa.gov/departments/food-safety/food-safety/food-processors/packaging-and-labeling>
- <https://green.uw.edu/blog/2019-08/reducing-food-waste-uw>
- <https://green.uw.edu/blog/2020-01/more-student-ideas-reduce-food-waste>
- <https://sustainability.wisc.edu/campus-users-respond-to-food-waste-survey/>
- <https://www.washington.edu/news/2022/01/31/uw-wins-2021-epa-regional-food-recovery-challenge-preventing-waste-and-feeding-the-hungry/>
- <https://www.washington.edu/anyhungryhusky/the-uw-food-pantry/>
- <https://www.npr.org/2022/07/15/1111850221/best-by-sell-by-use-by>
- <https://www.quora.com/Do-any-grocery-store-workers-check-expiration-dates-on-products>
- <https://www.quora.com/How-a-supermarket-check-the-expire-date-of-products-Just-let-employees-check-one-by-one>
- <https://www.vendhq.com/blog/taking-physical-count-inventory/#:~:text=The%20process%20typically%20involves%20a,electronically%20using%20a%20mobile%20device.>
- <https://www.matvett.no/bransje/matvett-in-english/expiry-date-included-in-barcode-reduces-food-waste>
- <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1371&context=ijamt>
- <https://www.harvardmagazine.com/2021/emily-broad-leib>

## Contextual Inquiry Notes

### Interview/Contextual Inquiry: Etc. Cafe (HUB) Student Coordinator 1

#### General Notes

- <https://hfs.uw.edu/Eat/dining-hours/Etc-HUB>
- 5-7 is the shift for restock (unsure if it is every day)
- Etc. Closes at 9:30pm (shift ends)

#### Interview

- **Tell me more about your role and responsibilities in the store? (Goal to get personas)**
  - Kelsey Boatman - Assistant Manager, Kboatman@uw.edu

- Louis - Manager, lphuti@uw.edu
  - Manager under Kelsey
  - Does the schedules for etc
  - Usually works during closing and understands these shifts more
- JiHoon - Student Coordinator, jikim97@uw.edu
  - Started in April
  - In charge of the convenience store floor & customer care
  - Give people tasks and what should be prioritized
  - He works 5-9:30 but not on Tuesday
  - \*\*Shift change seems to happen ~ 5
- **Tell me more about the process your store uses to manage expired foods and food waste?**
  - Types of more commonly expired foods:
    - Sushi
      - The sushi has VERY specific expiration dates (date and time, when I went the expiration date was ~ 2pm) (should have taken a pic of this!!)
    - Sandwiches
    - Bakery - Croissants, Muffins
    - Chips
    - Damaged Cans - “dumps” the liquid
    - Closers are doing a lot of the expiration date tasks
    - The night shift must look at expiration date and time. With the sushi/time in particular the night shift has to communicate with the day shift when to pull (usually in the afternoon for sushi the day before).
      - Closers have to make sure to remember to look at the expiration date and communicate this to the openers for the next date
    - Expired food process: **See what’s expired, gather, load onto a cart and log into “Waste Log”, get rid of expired food**
    - **See What’s Expired**
      - Closers make notes for openers about daily expiration dates (mostly for sushi)
      - They make notes with paper on a sharpie behind the desk and “it just works”
      - They “just know” what is OOS and when restock is needed
      - They are familiar with the inventory (you just know about all of the stuff we sell)
      - They check expired packaged foods by randomly checking the dates (they know they are longer) and they are just sort of going through the store checking things
        - “They just know”
    - **Gather**

- They do not stock/pull items for certain packaged manufacturer's (those manufacturers do it themselves)
  - Franz Creme Pie
  - Freal Milkshake
  - Kruger Mountain Cookie
- **Load onto Cart**
  - Cart is used in store and in the refrigerator (the walk in has a lot of space in the refrigerator)



- **Log in the "waste log" (see picture)**
  - Log by amount (oz, quantity)
  - If not sure of Oz. then will guess (example of the 14 oz one where he did that)

Item	Amount	Total Weight of Discarded (in pounds)
SABER	EACH	1
ELLENDOS	8 oz	1
COG POWDER	14 oz	1
Party Roll	14 oz	1
TOTAL POUNDAGE FOR DAY:		

- **Get rid of expired food**

- How they get rid of expired food - I was not able to see how this works because he wouldn't let me know in the Staff Only room. Not sure if this happens in the staff room or somewhere else. Not sure what this process is. According to JiHoon:
      - Food goes into compost
      - Container goes into garbage because of food stains
- **What do you like about the current process for managing your store's food waste? Why?**
  - JiHoon thinks that the best process is the one they are doing now
    - "Although it is all via paper, so software engineers could build something electronically technically to improve"
    - He can usually tell when things are expiring
    - Honestly, even though JiHoon said this the process could be made more efficient, if we talk to more people we would probably hear pain points. I say this because he was on the job and the manager, he can't give too much negative feedback about the system (he doesn't have incentive to be honest)
      - They want to pull food before it expires because "customers don't usually look at it for themselves"
- **What do you find most challenging about the food waste process? Why?**
  - Nothing is challenging
  - He can usually tell when things are expiring
- **If you had a magic wand and could change one thing about the process, what would it be and why?**
  - "Although it is all via paper, so software engineers could build something electronically technically to improve"
- **How often are you monitoring the food waste log?**
  - End of every night shift
- **How often are you pulling expired foods from the UW markets?**
  - End of every night shift

### Other Notes

- They recently changed the way the items are displayed in etc.
  - Changed flow of the items/ REdesigned
  - Couldn't move certain items because of partnerships etc with manufacturers
- They stock leftover Ace Sushi in the fridge from the Ace restaurant in the Hub (separate to the etc. cafe, which is Husky Food Services = HFS) to reduce this from going to waste
- They also transfer food from District Market (if something go out of stock). There was a separate place in the refrigerator for the District market food, not exactly sure what/why they kept district market food. He said that they restock from district market when they run out.
  - Is it when District Market food has extra?

- Dayshift
  - Does temperature check for the refrigerator

## Contextual Inquiry: Etc. Cafe (HUB) Student Coordinator 2

- Jess= Student coordinator
  - Pulling expired food is the job of the student coordinator
- Pulls the expired foods at closing @ 7:30pm
- They check the food every night for closing
- He groups foods and then comes around with cart at the end
- Tends to see more food waste on the weekends (Friday and Saturday), he showed me the amount of food waste from Saturday (was a lot)
  - This makes sense - it's located on campus in the hub vs near residential areas
- Plastic containers for sushi, sandwich and veggie cups are all compostable but he has to take the stickers off separately
- For each of the foods he has to physically pick up and look at the expiration dates for all of the items left and then sort from there (time consuming)
- Local independent products not a part of this process: Chips, Ice cream, brean, milkshake, Neato Burrito
  - Someone from the company comes and checks the food themselves (everyday or every other day)
- No dairy products (they got rid of these recently)
- Student workers are not pulling processed foods from the shelves
- Throughout the process he kept dropping the clipboard
- There is new management across the Husky Den
  - Lots of changes to staffing
- Order Purchasing Log/Waste Log
  - Hasn't noticed that they made any changes when he brings up that they are wasting a lot of food
  - Normally just sushi in the log but a lot more food now because of changes
- All of the food waste goes in the Compost in the front of the store
  - Has to take all stickers off individually - thinks that the stickers aren't compostable but not sure
  - Containers are compostable so he can throw those out (but actually wasn't sure about that until he checked), unsure if all of the contained are compostable
    - UW is supposed to have all compostable containers but he isn't sure if they actually are
    - He was told they are compostable
    - He then looked on the packaging and confirmed they were compostable
  - He throws out the stickers
  - Stickers get stuck on the containers and he has to pick off (is this still compostable in this case)



- 1) Look at time on the sticker
- 2) Move into piles (good vs bad)
- 3) Starts stacking by “type” of sushi (he needs to write this out on the sheet)
- 4) Adds to the waste log with a pen
  - He assumes they will use the log to reduce the orders so they have less waste, but hasn’t seen this happen in practice (oftentimes he will voice that we have a lot of waste but hasn’t seen a huge commitment to changing orders recently, especially with new management)
  - Weight can be found on sticker (but also seems to be generalized)
  - “Each” means that there isn’t an established weight for the food
  - Instead of filling in his initials everytime he just used an arrow to bring them down the column

### Sandwich

- A few sandwiches he did not have to pull because the person who makes those sandwiches checks and restocks them herself (every 1-2 days)
- These are sell by dates vs expiration dates
  - In a different format as the expiration date (no time)
- Technically he should wait until the end of the shift but since it’s so close to closing he throws those away too
- Process:
  - 1) Separates by expired vs not
  - 2) Separates by type of sandwich so that he can write in the log
  - 3) Adds to waste log with a pen

### Veggie Cups

- 1) Separates by expired vs not
- 2) Adds to waste log with a pen

### Noodles

- He forgot the noodles in the other refrigerator, they were recently separated so he was used to only looking in one fridge
- He checked some of the noodles and most of them weren’t expired yet so just assumed the rest were all good

### Baked Good

- He throws out all of the unpackaged baked goods
- Goes through all the packaged ones looking for expiration dates (usually on bottom like everything else)

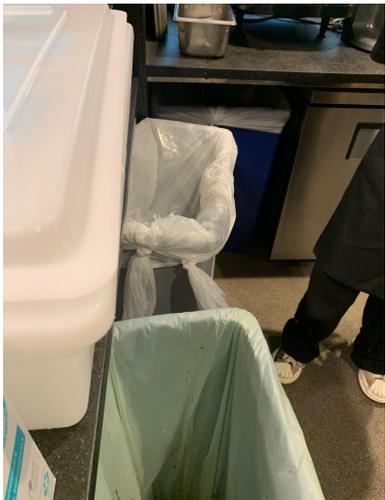
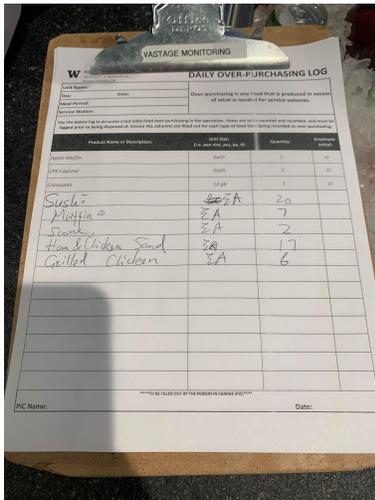
## Contextual Inquiry: Warehouse Manager at District Market

- As the Manager he manages food in bulk
- Product Contextual Inquiry - only given 5 minutes because he was “busy” and I caught him at the end of pulling his produce
  - Takes fruit from the bottom bins to the top to keep them fresh
  - Only gets rid of fruit when it is noticeably bad (based on bruises etc)



### Contextual Inquiry: Student Associate at Central Table Cafe

- Compost: Coffee Grinds, Coffee Cups
- Recycle Bin: Milk Boxes
- Donation: Sushi, Pastry
- Trash: Grilled Chicken in plastic containers
- They leave out bananas and pastries for employees, especially the student employees because they aren't fed "on the job"
  - Will save pastries for next day's morning workers
  - Will wrap the pastries to make sure they will stay until the next day
- They only use the waste log for the donated items, but they usually don't have too much of that to get rid of
- They get rid of pastries every night because they don't come in packaging so they can't check the expiration date
- Lead staff usually do this process (non-student employees who are full time)
- Students at this cafe tend to eat leftovers



## Contextual Inquiry: District Market at Alder Hall

**Date:** 10.29.2022 at 8am (Opening time)

**Interviewed:**

Opening barista at District Market Cafe

Cashier at District Market

staff responsible for inventory at District Market

**What I observed upon arrival**

There were barely any customers and the staff was busy wrapping up pastries to place them on shelves, some were breaking down cardboard boxes of the pastries and bakery items, and another person was conducting inventory for the open freezer displays (Grab and go items + salads)

Opening barista at District Market Cafe

**What do you do as a barista?**

I am the opener so I am responsible for putting pastry items on the shelf. I have to defrost them every morning then place them on the trays and put them on the shelves.

I am also responsible for dialing the coffee machine and making sure we have the right grind.

**How do you manage expired items or expiring dates of items on the shelf?**

The box comes with an expiration date, when we take the pastries out and place them on the tray we add the date on the tray. For example, I just added this tart today and it has to be sold within one day. If the item reaches its expiration date then I throw it in the compost bin.



**How does that work? Do you have to go somewhere to throw it?**

No, I just throw it in the compost bin in the store. But between you and me and I'm not supposed to say that but sometimes the manager allows us to give the items that are expired on the day for free for students.

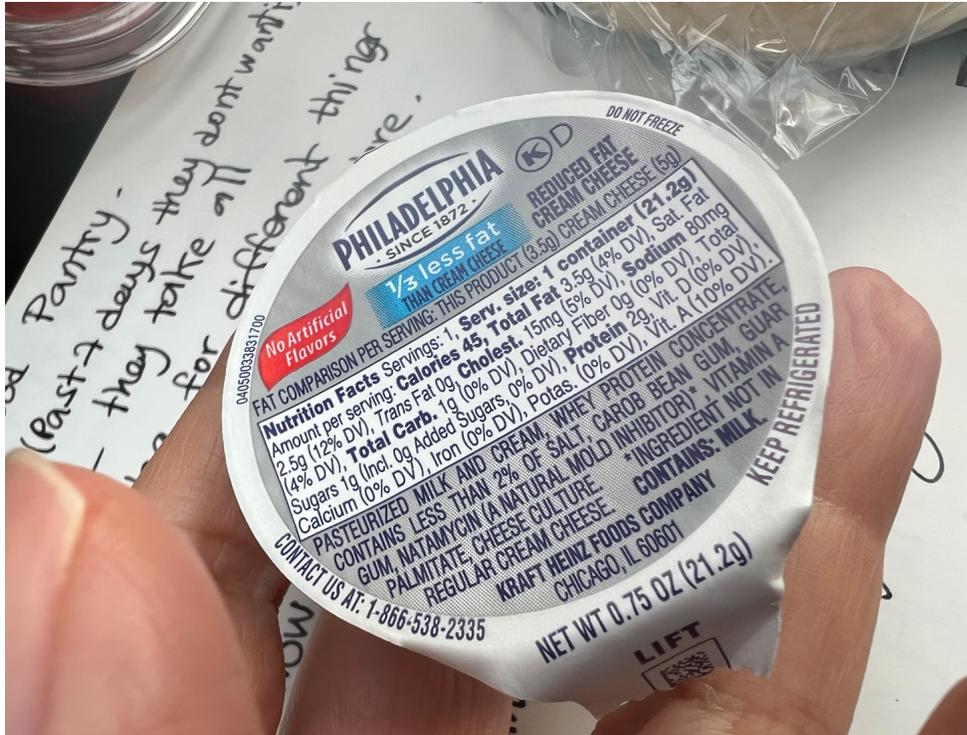


**Why do you throw them in the compost bin and not donate them?**

We can't donate pastries and bakery items because they are not packaged and they have a short shelf life.

**What about packaged items? For example there's no date on this cheese?**

Packaged items like this one come in a big box and the expiration date is on the box, that's how we check if they are old or not. If it is expired then we donate them.

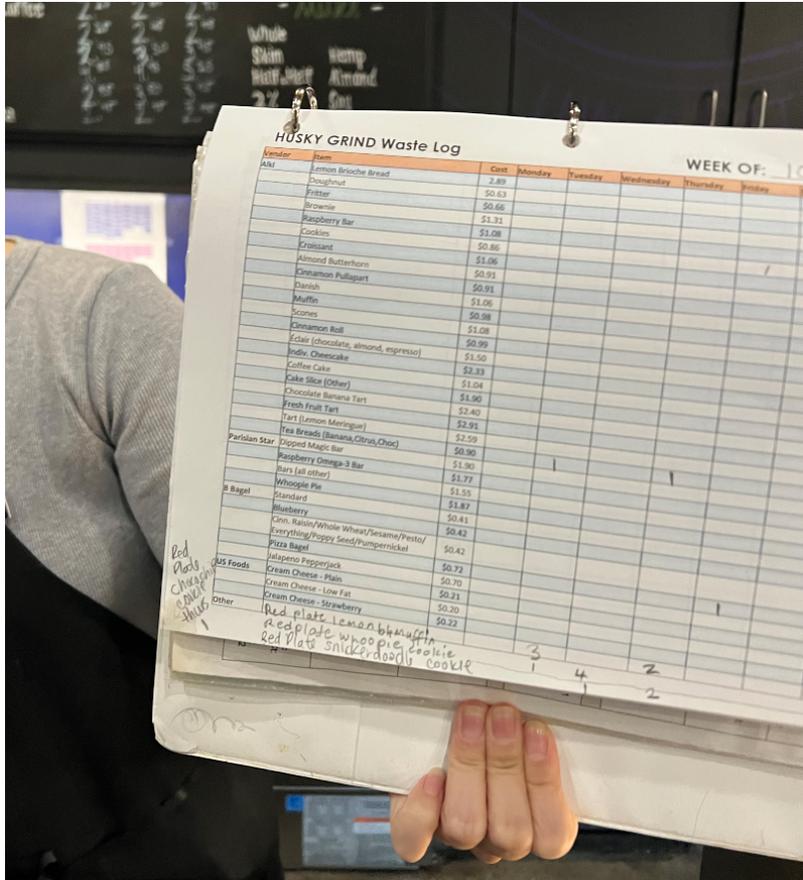


### Who do you donate them to?

To the food pantry. They come in and take expired items and items that have reached their sell by and best by dates.

### How do you track what you are wasting?

We have a waste log where we log the items that we waste. It's a bit overwhelming, there are so many pages and I find myself adding rows to accommodate for items that are not there.



Comment: The waste log contains the

- The vendors name
- The item
- Cost
- Row for each day of the week.
- Each page is a week of logs.

The employee is responsible for adding how many items they wasted every day of the week.

The log doesn't contain all the items so they add the ones that are missing. (Notice bottom part)

Do you do that on a daily basis?

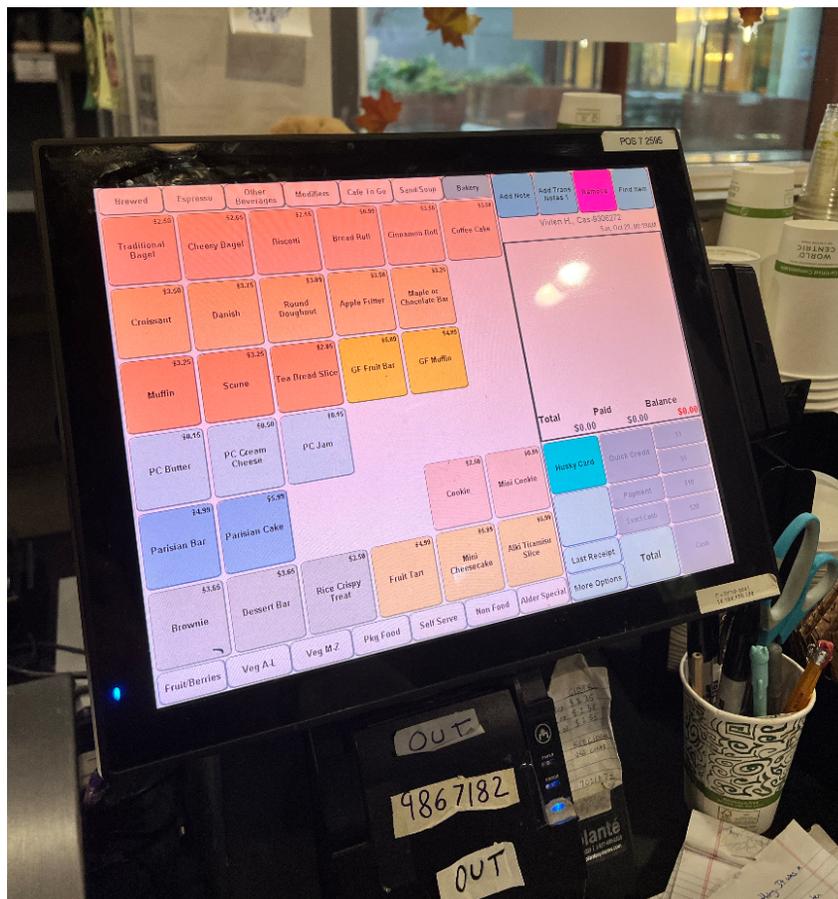
No, it's a weekly log and I don't usually do it as the store opener. The person who closes usually adds the items that they wasted to the log.

Do you add what you log on the waste log to the store system or computer in front of you?

No, we can't do that. The system here is only for checking out. I can see the items that we are selling only.

Does it tell you how many items you have on display on the shelves?

No it doesn't, it shows the items in the inventory but it doesn't tell me how many I have. This is only used for checking out. There's no way for me to tell how many items we have for each product.



**Does it tell you how many items you sold?**

No it doesn't, I don't know if it sends data to the manager but I can't see anything I sold on this system.

**What is the most challenging part of this process?**

I worry about spilling milk because then it goes to waste. Another thing is the coffee machines, It wastes so much coffee every morning that's coffee that is not being used to make coffee for customers.

**Why does it waste coffee?**

Well you have to dial it several times and each time you are adding coffee grinds and then wasting them until it is ready to use

**Why do you have to dial it several times?**

To make sure it is making the perfect coffee. Secondary research on that:

<https://www.wholelattelove.com/blogs/how-to/dialing-in-espreso>

**How many times do you do that?**

It varies sometime 3 sometimes 4. It's so inconsistent and it takes a lot of time.

**What do you do with the wasted coffee grinds?**

I just throw them in the compost bin.

Cashier at District Market

*Observation: He was very busy when I was talking to him, he was breaking down donut boxes and another staff member was taking out the donuts, she was wrapping the doughnuts in plastic wrap and placing them on a tray.*

**How do you handle food waste in this unit?**

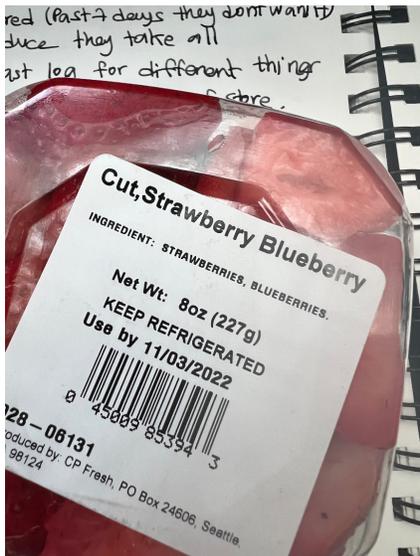
It depends on the food. If it is expired packaged food we donate it to the food pantry, but after 7 days they will not take it.

As for the produce the pantry staff likes to come in and choose what they take.





As for the grab and go and salad item we throw them in the compost bin.



Observation: I walked around and looked at some labels and there are a few different labels on the shelves: Best by, Sell by, Use by, expires on. This was confusing for me as a customer, and the cashier mentioned that it is confusing for staff.

**Why does the food pantry like to pick their own produce items?**

Because of how the produce looks, if it has marks or it is damaged. They come in and take what they like and the rest goes in the compost.



*Observation: This staff member was picking damaged and expired food items to place in a bin for food pantry. She seemed busy the minute I entered the store. Initially she was taking donuts outside of large boxes, wrapping up in plastic wrap, labeling them and then putting them on shelves. Then she moved to the produce to check on expired produce. Inventory seems to be a lot of work because the employee doesn't have any digital system to track expired items in store. When I was there, there were two employees checking labels and making sure to remove what has crossed the label date.*

**How do you know how much you wasted?**

We add these items to the store's waste logs.

**You have more than one?**

Yes we do have more than one. Each waste log is for a different thing. Each department in the store has its own waste log.

Produce has one, packaged items, salads to go; grab and go.

**How many waste logs do you have?**

We have quite a few, I don't know the number at the top of my head

*Observation: I feel that he wasn't comfortable talking to me about these things. It felt like he didn't want to give me the number of logs.*

**How often do you use these waste logs?**

No specific time, if I see an item that is expired I add it to the log.

### **How do you think this process can be improved?**

I think a big part of it is teaching staff how to handle food items. They usually put the old food with the new food and then it gets confusing. Making sure they check expired, sell by and best by dates.

*Observation: Customer came and our conversation was interrupted. At this time, the place starting to get busy*

He then continued...

Understanding the ordering process and analyzing trends of what we are ordering and what we are wasting and adjust orders accordingly.

### **Do you feel that the managers are not already doing that?**

I don't know what they are currently doing and I guess that's not part of my job but these are ideas because we are still wasting food.

*Observation: He had to leave because he needed to check out customers.*

Inventory staff member

*Observation: I observed Sam for a bit, he had a huge cart of boxes inside these boxes there were wrapped sandwiches and packaged salads. He was checking items on the shelves for expiration dates and then removing some and rearranging the shelf and adding new items from the boxes.*

### **What do you do here?**

I am responsible for restocking the cold shelves for grab and ago items + salads. I come in in the morning and I check items if they are expired and then I remove them and add what I removed to the waste log and then I restock with new items.



**Do you feel like you are wasting a lot of items in the morning?**

Not really, most of the time I come and the shelves are empty, sometimes in summer we waste a lot but during the school year maybe a few items. We are very busy here and students buy everything.

**What is challenging about this process?**

Shelving the items and making sure they are organized and checking the expiration dates and removing the old ones.

**If you had a magic wand what would you change about this process to help reduce food waste?**

Nothing I think its a great process.

# Contextual Inquiry - District Market Oak, Manager

District Market - Oak

Friday, Oct 28th 2022 9:45pm

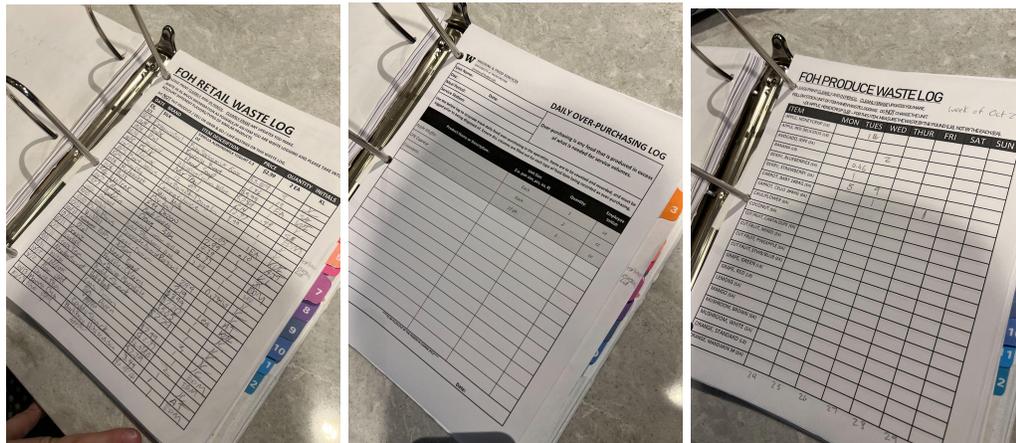
1. For CPK (Central Packed Kitchen) products such as District Market Chicken Kale Caesar salad, employees check expiration dates twice a day.
2. If the CPK product is open, the employee checks the open product with gloves on and makes sure nothing is missing. He/she takes the product and puts it in the break room for people to take.
3. For expired CPK products, the employee checks the date on the back of the package, if it's expired, he/she has to take all of the product with the same expiration date off of the shelf to ensure there's no contamination. If there's no date on the package, they would put an expiration date for 7 days out from the day they receive the product. Anything inside the product that's compostable, they would compost and anything that's not compostable would be either recycled or thrown away (e.g., the dressing packet).
4. Next, the employee writes down the date, types of items, prices, # of unit, reasons, and his/her initial in the BOH (Back of House) Waste Log. This allows them to track the amount, reasons, and who took care of the expired/open products. The market kitchen uses the waste log to make purchasing decisions.

5.





- 6.
7. For branded items such as the Sunrice prepared food, vendors come twice a week to check/restock the shelf.
8. Different types of waste log:



- a.
- b. On the retail log, the employee writes down the reason for the waste even though there's not a field for it, which is why she prefers the BOH waste log format.
- c. Daily Over-Purchasing Log is considered another form of waste log. For example, if they are throwing away 1 apple muffin on Tuesday this week, they'd buy 1 less unit of apple muffin for the following week.

## Interview Notes

### Interview (Student Staff): Central Table Student Coordinator

- **Tell me more about your role and responsibilities in the store? (Goal to get personas)**
  - Student coordinators are like student managers
    - Work between the students and managers
    - Have some more responsibilities as other associates
  - Tegan and Mary Jane are the two managers for Central Table

- Usually in the office earlier in the day (they should technically be in the office but when I checked they weren't there)
- **Tell me more about the process your store uses to manage expired foods?/food waste?**
  - Closes at 8pm
  - Sushi is thrown out at close
  - Prepared food is used across multiple locations
  - Prepared foods:
    - Sushi
    - Baked goods (not packaged)
    - Dinner foods
  - They throw food away at closing time/closing shift
    - Oftentimes the employees will eat the leftover sushi
  - Food goes into a community box in the back
  - Not sure if they save any of the foods
  - They also use the waste log when they get rid of close
    - Same waste log
- **What do you like about the current process for managing your store's food waste? Why?**
  - Eating the sushi for themselves
- **What do you find most challenging about the food waste process? Why?**
  - Sushi
    - Chef says that it can last 48 hours (so overnight), but the dates say midnight so they follow the dates that end at midnight
    - They've had sushi for the last couple of years
- **If you had a magic wand and could change one thing about the process, what would it be and why?**
  - Sushi has to be listed out separately which is "annoying" and time consuming for the employee
    - Ex. California Roll
- **How often are you monitoring the food waste log?**
  - At close every night
- **How often are you pulling expired foods from the UW markets?**
  - At close every night

## Interview (Student Staff): District Market Oak Student Assistant

- **Tell me more about your role and responsibilities in the store? (Goal to get personas)**
  - Student Assistant, mans the cashier and helps with other things in the store
  - Part time student working for the market
  - The District Market opened in Spring of 2022
- **Tell me more about the process your store uses to manage expired foods and food waste?**
  - Expiration Dates

- Floor managers check for expired food at the end of the night when they do the cooler temp checks (only do it for refrigerated items)
    - No process for pulling expired foods
    - Floor manager = lowest level of non student employee
    - Floor managers just keep track of dates for shelved/processed foods
    - Process could be improved with a clipboard but it could be put into excel
    - Can tell that the employees don't care about pulling the food
    - They can watch who stocks over the video but it's not tracked/managed well
  - Some of the food has a short shelf life (2 days)
    - This is mostly produce
    - They know when to pull it for infections because they can see it
    - Some of the produce get infections (mostly strawberries because of their producer for this)
      - They have to throw out all of this produce
    - They'll also check the produce when they are selling it (cashier) for infections
  - Summer shift pulling food
    - They'll check the dairy (based on the person), a lot of time expired food goes missing because it's not arranged First in last out
    - Will usually check the produce for expiration in the AM - opening is ~ 8-8:30 am
- **What do you like about the current process for managing your store's food waste? Why?**
  - When the produce goes bad, then it goes to the students to eat
  - There usually aren't any issues for expired foods (first in, last out)
    - Things go so quickly at the market (very busy) that they really don't have to worry about expired foods
- **What do you find most challenging about the food waste process? Why?**
  - Summer is when expired food is the worst
    - They aren't following FIFO
    - Summer sees less students and foot traffic since the market is near the dorms and there are less students in the summer
  - Coolers/Freezers breaking creates a lot of food waste
    - If shut down for awhile then they can't sell the food
    - The freezers are a weird shape and all attached so if one breaks they all break
    - If they can't fit in the kitchen freezer then they have to throw it away
    - This had been happening almost weekly for a while but then it got fixed and it's only happened once since then
- ~~If you had a magic wand and could change one thing about the process, what would it be and why?~~
- ~~How often are you monitoring the food waste log?~~

- **How often are you pulling expired foods from the UW markets?**
  - Depends on if in the summer or during the school year. If it's summer then the floor manager will check at the end of the night.
  - They check the produce every morning

## Interview (Student Staff): Food Recovery Student Coordinator ([glean@uw.edu](mailto:glean@uw.edu))

### Questions

1. **What is your responsibility as a food recovery coordinator at UW?**
  - a. Facilitating the food waste recovery effort by working collaboratively with UW farm/HFS and managing volunteers at UW who collect excess produce from UW Farm and ready-to-eat food that are still perfectly okay to eat. Quarterly gleaning schedule. Responsible for recruiting and training.
  - b. Provides supervision to gleaning efforts to recapture food waste from pre-packaged HFS meals and UW Farm produce.
2. **Who are the stakeholders involved in the food waste management process?**
  - a. UW Farm
  - b. HFS - only collect from 8 locations (2 District Market locations, Plaza Cafe, Center Table, Local Point, By George, 2 Starbucks locations)
  - c. 40 or so student/faculty volunteers
  - d. A team of 10 gleaning volunteers
  - e. Chris Jaehne, UW Pantry coordinator
  - f. Alex Silver, UW Pantry Student Director does budgeting
3. **What is the current end-to-end process for recovering expiring/expired food at UW?**
  - a. For HFS locations:
    - i. Volunteers go to UW Pantry, take crates with ice packs and walk over to dining locations. They could also drive by borrowing a U cart but it's not a requirement.
    - ii. Pick up food waste at the collection point, which is typically a walk-in fridge in the back of the kitchen but varies location by location. Volunteers check the sell-by dates on every item. They don't pick up anything past 3 days from the sell-by date. Anything that's more than 3 days past the sell-by date would be composted via the recycling system at the location.
    - iii. Transport items back to UW Pantry, log the items of the entire haul in the donation tracking Excel spreadsheet. Measuring and recording the weight and temperature (41 degrees or below) of the whole haul using scale. The measuring and recording takes about 5 min as food is weighted by the crate and temperature is taken for one item per haul.
    - iv. Put recovered items from the haul in the fridge/freezer.
    - v. **Insight: 1) There's the utmost importance to having a temperature control environment for transporting food waste back to UW Pantry. 2)**

Volunteers go to UW pantry to get empty crates first and then go to different locations and come back to UW pantry - it's a similar situation to the typical supply chain transportation problem where trucks deliver to the destination and drive back to the original location with empty containers/pallets. In this case, it's not a long distance but it's still a problem especially because volunteers have ice packs in the crates. 3) What percent of the food waste is past 3 days from the sell-by date for each trip, how can we lower the percentage of shrink? Does any food get spoiled during the transportation process? 4) Donation tracking Excel spreadsheet could potentially be improved, or is this one of those things where you don't fix it if it's not broken? Even though the logging process takes less than 5 min, it's a trade off between processing time and food safety as only one item from each haul is temperature checked.

- b. For UW farm:
  - i. Excess harvest produce washed, packed, transported by farm volunteers/staff/interns who would drive to UW Pantry from Center for horticulture locations.
  - ii. Brief staff members what's available/variety/ how to prepare. Display all of the shelf stable produce on the shelf. Visitor accessible fridge for anything that requires cold storage.
  - iii. Update signage with color codes to show how to store, whether it's shelf stable, the item needs to be placed in water, or be refrigerated.
  - iv. Anything that's no longer edible will be composted by the farm. Farm harvest all the produce for the week, anything that doesn't go to their CSA, or not purchased by campus dining location, farm give excess to UW Pantry. Typically once a week. More often in summer, less often in winter.
  - v. **Insight: 1) If I were to treat this as a supply chain problem, the food waste recovery from UW farm seems more streamlined than that from HFS locations. 2) The color coding system seems to be a quick visual system that may be used for expiration dates?**
- c. Challenges and strengths wrt food waste:
  - i. At the start of the quarter which is a common time when mismatches of supply and demand happen resulting in increasing amount of food waste or high sell-through rate/low in-stock rate at HFS locations. End of each quarter/ academic year is a big source of donations for the Pantry as people can't take or don't take a lot of things. Leftover dining funds could be donated to the Pantry. For waste pertaining to leftover food. It depends on how much dining locations order vs. # of visitors. Typically around the beginning of each quarter is when UW Pantry receives larger quantities of food waste as HFS locations haven't adjusted their forecasted quantities yet.

- ii. What works well currently is the strong composting system, industrially composted at UW. What's challenging is to predict how many people come to a location as there are a lot of variables to count for. When UW Pantry applies for a new budget every year, they include a record of how many people came in the past year and predict how many people they think will come next year. It's been increasing YOY.
  - iii. UW Pantry received 2445.27 lbs of food donations/food waste for the summer quarter which they report to UW recycling quarterly.
  - iv. **Insight: 1) While there may be an opportunity to improve customer experience and reduce food waste at HFS locations by optimizing the forecasting model, thereby increasing in-stock rate, my design problem pertains to increasing the efficiency of the food waste recovery process. Therefore, our goal is to equip UW communities with better tools for facilitating the end-to-end process. 2) any pain points during the time of increasing food waste/donations?**
4. **How has UW historically managed food waste and why did those processes change?**
- a. Don't have any historical knowledge.
  - b. UW pantry opened Nov 2018. Before then they were hosting monthly pop up sessions.
  - c. Started doing food recovery in Feb 2019.
5. **What works well about the current process for managing food waste at UW and what are some current challenges to this process? How would you improve the current process?**
- a. For waste pertaining to leftover food. It depends on how much dining locations order vs. # of visitors. Typically around the beginning of each quarter is when UW Pantry receives larger quantities of food waste as HFS locations haven't adjusted their forecasted quantities yet.
  - b. What works well currently is the strong composting system, industrially composted at UW. What's challenging is to predict how many people come to a location as there are a lot of variables to count for.
  - c. When UW Pantry applies for a new budget every year, they include a record of how many people came in the past year and predict how many people they think will come next year. It's been increasing YOY.
  - d. UW Pantry received 2445.27 lbs of food donations/food waste for the summer quarter which they report to UW recycling quarterly.
6. **What are the specific times or events that produce a substantial amount of food waste?**
- a. At the start of the quarter which is a common time when mismatches of supply and demand happen resulting in increasing amount of food waste or high sell-through rate/low in-stock rate at HFS locations. End of each quarter/ academic year is a big source of donations for the Pantry as people can't take or don't take a lot of things. Leftover dining funds could be donated to the Pantry.
7. **Three descriptive words for describing the current process.**

- a. It's pretty smooth at UW pantry, but it could get hectic. Food waste recovery could expand.
- b. Room for growth.

## Interview (Manager)

[amismith@uw.edu](mailto:amismith@uw.edu)

206.313.3524

- Tell me more about your role and responsibilities in the store? (Goal to get personas)
  - Managing employees. Does purchasing and overall problem solving, ensuring there aren't issues when it comes to day to day operation. For example, the lights in the dining room are not turning on, and she has to contact facility people. She ensures day to day operation is successful and employees are present. She doesn't like to micro-manage.
- Tell me more about the process your store uses to manage food waste?
  - They have a system in place where any product that is expired or excess waste that can not be used for productions for the next day would be counted as waste. Anything that's not used will be donated, transferred, or used for the next day or composted (last resort).
  - (Probe) Do you keep track of food waste and why? How do you track it if so?
    - Prepared food is considered as "in production" that they expect to sell to the public that day. The grab and go section also includes bottled beverages such as kombucha, apple juice.
    - Breakfast items generate a lot of waste. A lot of breakfast items would not be used, e.g., scramble eggs, oatmeal.
    - Write down waste log, overproduction log (cook in house, scramble eggs etc), overpurchase log (purchases such as egg, milk from the central kitchen location)
  - (Probe) Tell us more about the inventory management process.
    - They do inventory once a week, every Tuesday. They have inventory sheets/tablets.
    - All of the info in a central database, update inventory list, add or delete items, counting all food products other than prepared "in production" food.
    - The waste log and the inventory systems are two different systems. They are not linked. The inventory system is not used for prepared food.
- Tell me more about the process your store uses to manage expired foods?
  - (Probe) How do you track expiration dates for different food types (prepared/packaged,etc.)? How often are you pulling expired foods from the UW markets?
    - Expired goes to compost, if it's about to expire and if it's Friday and they're not open for two days, she reaches out to other units that will be open

during the weekend, she transfers to the two DM. Deliver product before she closes.

- Order grab and go items from the central production kitchen. Two-day shelf life usually, e.g., turkey sandwiches, chicken salad, ham sandwiches. Beverage items from coke, apple juice, those have expiration dates. Bakery items (could have two days/three days/five days as expiration dates)
- Every day, whenever they open or stock the coolers, staff always look at expiration dates.
- Beginning and ending of each shift. Twice a day.
- In the past, she's worked with a food bank, MealMatchUp but stopped when Covid happened. UW Pantry also reached out and is in talk with her. They would pick up twice a week. Items could have different dates - best date, sell by date. She would contact the food bank, and they would pick up twice a week.
- (Probe) Tell me more about the waste log you use:
  - How are you using the waste log? How often are you monitoring the food waste log?
    - Track the amount of waste they have every day. Every month look at the financial statement, factor in the amount of food waste. Do a forecast, compared to how much they have purchased.
    - They track the item and dollar amount, and calculate weekly/monthly which is then used by the finance dept.
    - The waste log is used everyday. They input the waste data into database once a week, so financial dept could use that info
    - Constantly looking at the waste log, checking with staff, and determining what product to order for the following week - i.e., today one of the workers said they have too many peanut butter sandwiches and asked if they can reduce that item next week. Factor in the business flow, the beginning of the week during midterms are busy times.
- What do you like about the current process for managing your store's food waste? Why?
  - She can reach out to other dining units or support food banks before letting the food go to waste.
- What do you find most challenging about the food waste process? Why?
  - Dining units may not be able to accept if they have excess food or for whatever reason, then she would have to throw food away.
- If you had a magic wand and could change one thing about the process, what would it be and why? 5 whys?
  - Why? The process can be tedious as they have to track it every day. For example, today they realized that some employees did not log some items they threw away. She was upset.
  - Why? Now she doesn't know what they threw out and she can't account for them in the waste log.

- Why didn't they log food waste? They were short staffed. It was a transitional period from breakfast to lunch. If they're understaffed, they might set those food waste aside and forget about it.
- What would she do? She would have to micromanage the staff more if that means they log the food waste, but she doesn't want to. Logging the food waste should be second nature by now. She could also have someone else (e.g., dish washer) log on their behalf during busy times.

Waste Log .XLSX

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	A	B	C	D	E	F	G	H	I
1		Item	Unit Cost	8/15	8/16	8/17	8/18	8/19	
2		<b>Bars</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3	BAR02042	Bar Crispy Treat Plain 6CT -GnG	\$1.48						\$0.00
4	BAR0398	Bar Gluten Free Brownie GNG	\$2.60						\$0.00
5		<b>Muffins</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	MUF02108	Muffin Lrg - Almond Poppy Seed - GnG	\$1.28						\$0.00
7	MUF02109	Muffin Lrg - Blueberry Streusel - GnG	\$1.28						\$0.00
8	MUF02112	Muffin Lrg - Cappuccino Choc Chunk - GnG	\$1.28						\$0.00
9	MUF04270	Muffin Lrg-Pumpkin Cheese GNG	\$1.88						\$0.00
10	MUF02110	Muffin Lrg - Raspberry Coconut - GnG	\$1.28						\$0.00
11		<b>Donuts</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	DNT04047	Donut - #32 Alki Apple Fritter - ind	\$1.54						\$0.00
13	DNT04283	Donut - #40 Alki Blueberry Fritter-ind	\$1.50						\$0.00
14	DNT04282	Donut - #39 Old Fashion - ind	\$1.50						\$0.00
15	DNT04284	Donut - #41 Vanilla Cake - ind	\$1.50						\$0.00
16		<b>Croissants</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	VEN01237	Croissant Lrg - Almond 6ct	\$1.17						\$0.00
18	VEN00262	Croissant Lrg - Butter 6ct	\$1.10						\$0.00
19	VEN01238	Croissant Lrg - Pain au Chocolat 6ct	\$1.08						\$0.00
20	DAN00839	Danish Lrg - Cream Cheese Original 6ct	\$1.27						\$0.00
21	DAN04222	Danish Lrg - Marionberry - ind wrp 6CT	\$1.61						\$0.00
22		<b>Scones</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	SCN02130	Scone Lrg-Blueberry Gng	\$1.56						\$0.00
24	SCN04272	Scone Lrg- Apricot White Chocolate GNG	\$1.62						\$0.00
25	SCN04274	Scone Lrg- Lemon Currant GNG	\$1.62						\$0.00
26	SCN04273	Scone Lrg - Lemon Raspberry GNG	\$1.62						\$0.00
27		<b>Tea Loaf</b>		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

## Interview (Manager): District Market at Adler Hall

### 1. At a high level, can you walk me through the process of how you manage food that is expiring on the shelves?

- One of the first steps is through our order coordinators who are placing orders. Understanding volume, product type(perishable, frozen, non-frozen, dry goods etc.) and shelf life is highly important to be able to meet customer needs but also do our part in reducing waste. Inventory management is huge and there are processes in place to do weekly and monthly inventory. This is all a manual process. There are of course resources we use such as waste log tracking, sales reports and stocking procedures in place. FIFO is a big part of training and tracking dating for the kitchen is also a big portion of controlling waste and maintain adequate food production levels. Most of this is tied into the roles of our staff and their daily routines.

### 2. Does the process vary for prepared foods/produce/package food? How so?

- Yes, of course. We have batch sizes for our in house items and a production schedule. This is a bit more critical as the items does not have preservatives so production frequency is higher ( for example, Turkey cheddar sandwich is produced daily, has a two day shelf life) so having a par and batch size it critical. Cross utilization of items is also a big strategy in minimizing waste. If I could give you an example of a life cycle of a chicken breast- we receive it fresh maybe on a Monday, sell raw in our meat case – if by day 3 it is not sold raw, then we cook it. Chicken is used in a variety of our dishes but the goal is to take the raw product and sell as is but if it does not, there is a procedure to extend the cycle(following health code of course) and ensuring the product is used and consumed. The same concept is true for fresh produce – If it is not sold in the produce department or there is a superficial flaw can we turn it into an ingredient for our kitchen to use. An example pumpkins- super seasonal right now, on display for customers to purchase, but also we have a way to cook this and create a puree for the café to use in a seasonal drink. (cross merchandizing and cross utilization are both terms that come to mind for this).

**3. What part of the process is the most tedious/challenging for you or your employees? Roughly how much time do you believe is spent by employees on the whole process you described above?**

- It is in every process of what we do when I really think about it. From opening routines and checking for expired items, damaged items or receiving product to throughout the day as we are stocking and checking dates on merchandize to rotating out produce. I would say this is 80% of any job that is incorporated into the tasks that are being performed.

**4. Do you have any existing strategies for reducing the inventory shrinkage caused by having to throw out expired food?**

- Tracking waste, adjusting pars, discontinuing low sellers, displays and product placement are all methods that we use. There will always be some sort of waste or an ideal percentage that is a target. We have and do partner with UW Food Pantry, Food Life Line and the U-district food bank when we have waste. Big Box retailers have clearance, sales and promotions along with other tactics.

**5. Lastly, if you had a magic wand and could change one part of the process - what would you change?**

- For retail, Rear loading everything would be great, use of more technology that is streamlined ( perpetual inventory) and that all systems could speak to each other from ordering to Point of sale system and a trackable digital software to track all food information(tracing all info). We are talking about thousands of line items so some solutions do exists but I find that compatibility and the uniqueness of dining in general along with contractual obligations at times inhibit us from being the most efficient/innovative as we could be.

## Interview (Manager): UW Food Services Manager of Multiple Locations

### Who are they?

Mai-Lynn Williams,  
Manager at 206-221-7051 or [mailynn@uw.edu](mailto:mailynn@uw.edu)

### What do they do?

Manages staff and processes at the below UW Food Service Facilities (Food units):

- Overpass
- Microsoft cafe
- Evolutionary Grounds
- Mary Gates Hall
- Parnassus
- Orange place
- Public grounds

### Who are the users involved in the management of food waste?

Myself and the staff in each of the food service units mentioned above.

### What is the current process?

Depends on the type of food. If it is baked items or unwrapped foods we dispose of them based on their shelf life. For example bagels are good for 3 days, muffins for 3 days, croissants for 4 days. If it is expired food, no one will take it so we throw it in compost which gets picked up by Cedar Grove who composts and sells it back as compost bags

If it reaches its sell by date then we donate it to any of the three locations within 3 days and it has to be frozen:

- UW Food Pantry
- U-District Food Bank
- University Food Bank
- Food LifeLine

If it reaches its best by date then we have to donate it within 3 months and it has to be frozen as well, and we donate it to the above facilities.

3 days a week, as the manager of these UW food units, I have to drive pick up the items to be donated and drive them to allocated locations

### Look at what they do: A day in the life:

1. Come in the store
2. Scan each item that is being displayed
3. By the end of day, check inventory, record all items that were left over on a sheet of paper.  
We tried Google sheet but it wasn't mobile friendly and the staff found it hard to add items
  - a. If its sell by → 3 days to Donate to Food Pantry (we have to freeze them)
  - b. If it is expired → Send to Compost → Cedar Grove
  - c. If it is best by → 3 month to donate to food pantry (we have to freeze them)
4. 3 times a week manager of the unit drives to donate food

### **What challenges exist for managing expiring food at uw food facilities?**

One of the challenges is you have remote units, each unit has its own items to donate to different facilities. Each unit has its own hours of operation and each of the facilities has their opening hours. Sometimes we don't make it in time for some "Sell by" items so we end up throwing them in the compost because the facilities are not open during the time we can take the donated items. For example the University Food Bank has inconsistent hours.

Another challenge is logistics, sometimes employees are not aware of each facility's logistics and they end up not accepting the food. Which is another hurdle, employees are not taught the guidelines for managing food waste..

### **What is the process or requirements for expired or expiring food in the UW grocery store and/or cafeteria?**

Expiring food goes to compost. No place takes anything that is expired. This is the law.

This process is done by individual managers of the unit, they decide on the process.

Everything that is displayed in the beginning of the week / day is labeled and we add the item to the system. Everything that is not sold (expired or donated) by the end of the day or week is wasted and recorded on a piece of paper. For my units I have what is called a waste log.

### **What is the waste log?**

A waste log is a place where the staff can record the items that were expired or donated. Our computer systems record what is being sold but they don't record what is being wasted. It is a piece of paper that is placed in each food unit that I manage, each staff member is required to record every item that they composted or donated.

## **5 Whys method from Ask**

### **Why not log it on the system?**

The system only records what is being sold, not what is wasted. That's why we have a piece paper in each food store to record wasted items.

**Why a piece of paper?**

Well the system doesn't record wasted food and I tried creating a google doc where the staff can record their items but it didn't work.

**Why didn't Google Docs work for them?**

It wasn't friendly to access and the staff found it hard to log items on their phone screen.

**Why do you need a waste log?**

The waste log helps me monitor trends of purchases, what items are not being sold by the end of the week or month. What items I need to order less of.

**Why does it matter to monitor sales trends and waste trends?**

Its better for business, we then order the things the consumer wants and waste less items.

**How often do you manage food waste?**

Monday through friday. We inventory food every day.. I have to drive to donate food 3 times a week which is usually an hour or so every week.

**Are there specific times or events when there is a lot of food waste?**

Yes, the beginning of fall quarter is usually when we under-order or over-order.

**Why is that?**

It's because we haven't established a rhythm yet or we don't know the trends.

**Why not look at what you sold in previous years?**

We used to do that but the pandemic disrupted everything, we were closed during lockdown and there was a lot of uncertainty.

**How do you think this process can improve and be more efficient?**

Automation! I want to physically scan all items being displayed and what is being pulled out in the morning and scan what you put in and scan what we waste and donate to help me understand what I should order next time.

**Can I reach out in the future and talk more about the process?**

Yes, happy to help but I can't during Halloween week :)

## Learn - Flow Analysis

