ZERO HUNGER | ZERO WASTE

PROPOSALS TO ADDRESS THE ISSUE OF FOOD WASTE MANAGEMENT AND HUNGER AT UC

PD 2030 | Inquiry to Innovation | Fall 2019
In Fall 2019, the UC Forward Inquiry to Innovation class partnered with Kroger and the Zero Hunger/Zero Waste Foundation to focus on food waste prevention, rescue and redistribution.

Class Innovation concepts targeted campus food waste and food insecurity for students and the community around campus.

Source: www.krogerstories.com/zerohungerzerowaste/
FOOD INSECURITY: Food insecurity can be described as the lack of consistent, sufficient food necessary to live a healthy lifestyle. Food insecurity is a very complex problem. A food insecure household is one that does not have access to enough food, especially healthy food, to meet the needs of those living within the household. This is usually due to a lack of income, a lack of nearby grocery stores, a lack of affordable transportation, or a combination of all three. In 2018, about 11% of US households were food insecure at some point throughout the year.[4]

NEEDLESS HUNGER

Food waste is a significant problem in the United States. In 2018, about 11% of US households were food insecure at some point throughout the year. Food waste is traditionally not consumed by humans, and most often follows routes to either feed animals, or becomes compost (ReFED). It is for this reason that food recovery must exist, and is a critical component to the food cycle. Recovery can take place through donations of safe-to-eat food from stores or by individual consumers before it is discarded.

FOOD RECOVERY/FOOD RESCUE: Food recovery/rescue is an essential outlet that exists between when an individual discards a food item, and when that item is defined as food waste. Food waste is traditionally not consumed by humans, and most often follows routes to either feed animals, or becomes compost (ReFED). It is for this reason that food recovery must exist, and is a critical component to the food cycle. Recovery can take place through donations of safe-to-eat food from stores or by individual consumers before it is discarded.

FOOD WASTE:

According to the United States’ Department of Agriculture, “food waste” is defined as “the edible amount of food, postharvest, that is available for human consumption but is not consumed for any reason.”[1] This food may be wasted as a result of improper storage within a facility, an inability to be sold or depopulation within consumer fridges. Food waste includes food scraps, leftover food, and any un Consumed food that gets disposed of via landfill. What is concerning, is that food waste is almost entirely food that could have otherwise been recycled or composted.

As a bigger part of the issue, food waste and habits concerning food in America are partially a cultural and social concern.

FOOD SECURITY:

Food insecurity can be described as the lack of consistent, sufficient food necessary to live a healthy lifestyle. Food insecurity is a very complex problem. A food insecure household is one that does not have access to enough food, especially healthy food, to meet the needs of those living within the household. This is usually due to a lack of income, a lack of nearby grocery stores, a lack of affordable transportation, or a combination of all three. In 2018, about 11% of US households were food insecure at some point throughout the year.[4] Nearly 95% of discarded food ends up in landfills, it produces methane, a significant contributor to climate change.

In the United States alone, discarded food, when expressed in terms of energy, is the equivalent to almost 350 million barrels of oil per year.[5] Food waste is traditionally not consumed by humans, and most often follows routes to either feed animals, or becomes compost (ReFED). It is for this reason that food recovery must exist, and is a critical component to the food cycle. Recovery can take place through donations of safe-to-eat food from stores or by individual consumers before it is discarded.

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DEFINITIONS

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10. Source: Rethinking: Rebooting the Food System
ENVIRONMENTAL IMPACTS

Food waste has a significant negative impact on the environment.

**CONTRIBUTION TO GLOBAL WARMING:** Food, which is usually comprised of organic materials, emits greenhouse gasses when it begins to decompose.* Food in landfills primarily emits methane, which is considered to be a more potent and powerful greenhouse gas than carbon dioxide. In the United States, 14% of the greenhouse gas emissions are related to food production. Finally, when uneaten food reaches landfill, it breaks down and produces 25% of all methane gas emissions in the United States.

**LOSS OF LAND:** Wasted food also requires space. Roughly 300 million people in America produce 3.5 pounds of trash\(^7\) that ends up in a landfill per day, that would create 1,050,000,000 cubic feet of waste in a day. If 15.73% of that waste is that of food, a year’s worth of food waste would require 165,165,000 cubic feet. According to the United Nations, the world population is expected to continue to grow, reaching 9.7 billion by 2050.\(^8\) By reducing the amount of food wasted, landfills will not require as much land. If less food is being bought (and subsequently disposed of) agricultural companies, factories and farms will be able to scale back production, which means that they would not need nearly as much land for expansion, thus saving the loss of land to landfills and excessive production.

**LOSS OF RESOURCES:** In addition to polluting the Earth after it has been discarded, the act of producing excess food also has a negative impact on biodiversity, water, and land. Resources, like oil, that go into making the food is also wasted as the food that was produced is wasted.\(^9\) That is about 133 billion pounds of food every year and equals to wasting an entire meal’s worth of calories per person each and every day.\(^10\) This is coupled with the fact that 25% of the freshwater resources that are used to create food are wasted when that food is thrown away. A significant amount of water used goes towards animal agriculture, and with much of the resulting animal products going to waste, animal agriculture is a significant source of waste. 50,000 liters of water are needed to produce a single kilogram of beef. It’s estimated that in order to produce the amount of food that is wasted, a volume of water three times the size of Lake Geneva is needed.\(^11\)

*Greenhouse gases prevent energy from leaving the atmosphere in the form of heat, so that heat in turn heats up the surface of the earth (“Understanding Global Warming Potentials”). The methane gas that is being produced also creates a hole in the ozone layer allowing for more UV rays from the sun to get into the atmosphere. \(^11\)


\(^6\) http://www.fao.org/3/i3347e/i3347e.pdf

\(^7\) [https://www.ecoclean.in/whatistheaveragewastegeneratedbyahumanbeing](https://www.ecoclean.in/whatistheaveragewastegeneratedbyahumanbeing)


\(^11\) [https://www.epa.gov/ozone-layer-protection/basic-ozone-layer-science](https://www.epa.gov/ozone-layer-protection/basic-ozone-layer-science)

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**CLASS PROCESS**

To begin the classwork, Kroger-ZH/ZW collaborators and area food recovery advocates introduced the problem to the class. The first step the students was to understand the extent of the issue. This included comprehension of the problem and in-depth research about its causes, results and its magnitude. Once the research was conducted, a number of issues came into focus and then students chose one or some of the issues to be addressed. These issues can be broadly classified by the food recovery hierarchy pyramid developed by the USDA.

Teams then developed a conjecture as to how they would address the observed problem on and around campus. Students documented relevant precedents and distilled best practices. Concepts were developed and then feedback was collected from a variety of on- and off campus stakeholders. This was followed by drafting of a full proposal and the design of prototype programs which were tested and judged as to estimated impact.
A college campus is a unique microcosm for studying food waste and insecurity. Universities draw students from a wide variety of backgrounds; often times, you have students who come from privilege and those who come from food insecure environments living next door to each other.10 Every year, about 22 million pounds of food is wasted on college campuses.11 While this is occurring, in 5 college students are food insecure.12 An estimated twenty percent of students on the University of Cincinnati’s campus are considered “food insecure.”13 This could amount to 8,000 students of food insecurity.14 This could amount to 8,000 students experiencing a lack of adequate financial resources or consistent access to enough food for an active, healthy lifestyle.15

Every year, about 22 million pounds of food is wasted on college campuses.16 It was estimated that of the 130 billion pounds of food waste that is sent to the landfill each year nationally, 22 million pounds come from college campuses. Dividing by that each student that is in college, each student wastes roughly 142 pounds of food each year. Mathematically, if each student were to waste 142 pounds of food each year, about 22 million pounds come from college campuses.17 While this is occurring, 1 in 3 college students are food insecure.18

### STUDENT ORGANIZATION EVENTS

There are many locations on campus that food waste can come from. Primarily, the food waste is going to come from individuals who are throwing away food they don’t use, and secondarily from the dining halls throwing out food that they don’t use. Another source of food waste comes from the events organized by student organizations.

Class research estimated that as much as 4000 lbs of food are thrown away during student organization events on campus each year. This was based on 17 survey responses, that indicates that up to 95% of all student organizations produce some food waste every month, with most organizations reporting holding one or more events per month. With approximately 550 student clubs registered on University of Cincinnati’s student organization website this could mean that up to approximately 1700 servings of food go to waste each academic year. The survey also allowed us to gauge student organization’s interest in the food waste crisis, proving that although many did not know of a serious issue, the majority were willing to help promote awareness about food waste on campus.

However, rescuing left over food from student organization events is challenging. Not all events have a fixed location or meeting time, the amount and type of leftover food is highly variable and often food served at these events cannot typically be repackaged and stored for an extended amount of time.

### CURRENT MEASURES

The University of Cincinnati’s dining services waste more than 12 tons of served and unused food per year. UC Dining services has implemented strategies to reducing food waste so “trayless” dining and most recently with “TeamPath” waste auditing system which monitors pre-consumer waste by as much as 65%. Yet an appreciable amount of unused food at UC Dining halls remains available for rescue and consumption by food insecure students and others.

Food insecure students have access to an important student organization called the Bearcats Pantry as a distribution center for donated canned and dry goods established in 2016. The goal of the Pantry is to assist students in need by utilizing donations from the community and connecting them to resources in an effort to prevent food insecurity. The UC Bearcats Pantry provides free food, hygiene items, cleaning supplies, and professional clothing to students of all backgrounds. The pantry also provides meal vouchers that can be used at campus dining halls or at food insecure students and others.

The UC Bearcats Pantry provides food, hygiene items, cleaning supplies, and professional clothing to students of all backgrounds with food and other insecurities. The Pantry also provides meal vouchers that can be used at campus dining halls and To-Go Bags that can be conveniently picked up at locations across campus. The Pantry is located inside Strawford Heights Building 19. at the edge of campus. For the Pantry’s inventory, dry goods donations are received from UC faculty and students a few times throughout the year. According to Jessie Fix (Graduate Assistant at Bearcats Pantry), when the UC Sustainability Community Garden is in season, they will donate some produce to the Bearcats Pantry and some to local food banks. When the garden is not in season Fix sends an e-mail to food insecure students. Currently the Bearcats Pantry is unable to take perishable goods due to their lack of refrigeration.

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Donations are usually brought directly to the Bearcat Pantry, with collaborating academic departments on campus, periodically hosting a food drive and volunteers delivering the collected dry goods to the Pantry. Additionally, the Bearcats Pantry has been collecting canned goods at UC football games, with the assistance of UC President Neville Pinto, and for a period of time the Pantry used University Nightride vehicles to transport these goods to three location at Strawford Heights.

The Pantry is well served by volunteer student staff. 413 students volunteered for shift work managing the Bearcats Pantry during the 2018-2019 school year. Many more students want to volunteer, but the pantry has a limited inventory and does not currently have the capacity to manage any more volunteers.

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 através de e-mail para os alunos de necessidade. Atualmente, o熊猫储藏室 está disponível para resgate e consumo por estudantes que sejam inseguros de alimento. O熊猫储藏室 normalmente não aceita alimentos perigosos devido a falta de refrigeração.
CASE STUDIES

The case studies conducted by students focused on three elements of the food recovery hierarchy: reduction at source, recovery, and redistribution, and composting of food waste. Each of the issues were found to have been addressed through different means. Based on the case studies, best practices were inferred which in turn helped in formulating the student proposals in the next stage.

REDUCTION AT SOURCE

UNIVERSITY EVENTS

Penn State held an event called Food Waste Awareness Week through the Student Sustainability Council. The event was aimed at educating students about food waste on campus through workshops, viewing on food waste and hosting meals serving food rescued from sustainable sources. The event was solely student run as multiple clubs were involved.

Take away: Involving student organizations in sustainable dining helps raise awareness of food waste issues.

RECOVERY AND REDISTRIBUTION

APPLICATION APPS

The Lunchbox app is popular in six American cities that track and encourage food waste. It prompts on campus with free food to students.

Take away: Best Practices for a prevention curriculum for students of all ages. The app generates models for relevant coursework.

NOTIFICATION APPS

Students at Case Western Reserve University (CWRU) established a local Food Recovery Network (FRN) in 2017. The FRN established student task forces to divert edible food waste around university communities from landfills. The CRWU Food Recovery Network observed approximately 100 pounds of edible food waste per week in 2017. The Food Recovery Network in local retail communities, such as United Supermarkets, Sweetberry Bowls, and even the Cleveland Clinic. The CRWU Food Recovery Network also holds educational events about the environmental impacts of food waste.

Take away: Being a part of a larger network of organizations for food waste management is a good strategy to decrease wasted food in universities.

NETWORKS

CWRU Food Recovery Network

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CURRICULUM

The World Wildlife Foundation has waste reduction curriculums for students of middle and elementary school. It provides lessons, activities, and resources to show what we eat and what we throw away is impacted by creating a connection in the classroom on food waste prevention. Education programs cover food waste, human service, service learning, and more. Many students of all ages have provided models for relevant coursework.

Take away: Best Practices for a course design. Experiential learning, service learning, community engagement, interdisciplinary enrollment, thoughtful self, team, innovative structure, and holistic curriculum.

INFORMATICS

In 2017, University of Cincinnati incorporated a food waste measuring App called LeanPath (in two dining centers) that tracks the amount of food waste on campus through incorporating recovery and redistribution. This app helps schools make more informed decisions about their food waste and for the student proposals in the next stage.

Take away: Implementing student organizations in sustainable dining create awareness of food waste issues.

MARKETING CAMPAIGN

In 2015, UC rolled out a policy called Feeding Forward in order to reduce food waste on campus. The policy applies to all students, faculty, staff, and students of all ages. The policy has seen significant changes in the campus culture.

Take away: Policies can quickly and effectively change the university culture.

Source: https://sustainability.uci.edu/sustainablecampus/
The Ohio State University established the OSU Food Waste Collaborative as a coordinated effort between students and faculty to combat food waste in a variety of ways. As a student-led initiative with faculty support, the program has grown immensely since its conception. On the student side of the OSU Food Waste Collaboration, the students established a local chapter organization of the national food waste reduction organization, the Food Recovery Network. In a unique OSU student initiative, the students aimed to recover the surplus, unthrifted food from campus dining halls, local farms, and local businesses to donate to food banks and charities around Columbus.

Outside of the student organization that is involved in food recovery, there are also faculty-led research initiatives regarding greenhouse gas emissions of food waste, among other projects, and consulting services to help food waste reduction efforts in local practices. The OSU Food Waste Collaborative utilizes a hybrid approach to recover food, balancing the cost of waste from dining halls to nearby food pantries. Additionally, students at OSU earned 2018 NEI funding to put towards their food recovery mission. The funding came from Tropic, a French energy company, and Tomra, an Ohio-based non-profit focused on innovative solutions to composting issues. OSU provides a stellar example for what local universities in Ohio, two prestigious to others, can do with adequate money and local support.

**Take away:**
A joint approach from the students and faculty along with support from university can create an exemplary system of food waste management.

**Case Studies**

**OSU Food Waste Collaborative**

**Case 1: The University of Louisville**

The University of Louisville has adopted a food recovery system to help students reduce waste, compost, and reduce sustainability efforts, creating a highly standardized model for other universities to try and reform.

At George Washington University, student organizations are required to sign a contract, agreeing that they will donate or compost any leftover food. The campus has begun a composting initiative that students can use to reduce waste and also reduce food waste by drafting a 5 year sustainability plan.

**Case 2: Case Western Reserve University Food Recovery Network**

The Case Western Reserve University student organization is a model for a student-led initiative in Ohio. If a reliable collection and distribution system is put in place to divert edible food waste from sources close to campus to the Bearcats Pantry and Little Sisters of the Poor, the campus's share of food insecurity for all UC students. The pantry serves the majority of volunteers. During the 2018-2019 academic year, the Bearcats Pantry distributed 360 hours / week of food.

**Case 3: University of California**

The University of California system focuses on reducing food waste through recycling, composting, and reducing the amount of food waste on campus. The UC system aims to reduce food waste by creating a high cost infrastructure project to reduce food waste. The UC system has also established a food waste reduction system to divert food waste from sources close to campus to the Bearcats Pantry and Little Sisters of the Poor.

**Case 4: Ohio University**

Ohio University collaborated with Local Action and the Youngstown Board of Education to improve local food waste reduction efforts. The university has adopted a high cost infrastructure project to reduce food waste. The university has also established a food waste reduction system to divert food waste from sources close to campus to the Bearcats Pantry and Little Sisters of the Poor.
PROJECT 1

AWARENESS: CURRICULAR CHANGES AT UC TO PROMOTE FOOD WASTE AWARENESS

Akiva Kirschner, Ellie Glover, Paige Sumser

STUDENT CONJECTURE

If opportunities are integrated into the education system at UC that allow for students to learn about the environmental impacts of food waste, then they will have the awareness and ability to reduce their impact.

Currently, no courses at UC on Food Waste are available to undergraduate students.

PROCESS

Students in this team conducted extensive research on existing course offerings, degree programs, micro-credentials, and general undergraduate education requirements at UC. This included documenting individual courses from the UC course catalog for content related to sustainability, food, and food waste. A student survey was conducted to determine interest and preferred course characteristics. Consultations with faculty and academic Program Directors identified barriers and provided direction for ideal course learning outcomes and curricular fit. A model course syllabus was developed and academic program hosting identified. A marketing and recruiting strategy was explored.

PROPOSAL

Develop special permanent course offerings in the UC curriculum that support awareness about food waste and its impact. Facilitate the special course offerings in multiple programs by developing a “shell course” with core learning outcomes that can be extended for specific program curriculum. With UC enrollment at more than 46,000, even minimal enrollment in these proposed courses would promote awareness and lifelong best practices to reduce student food waste which is documented at 142 lbs/yr.

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[Diagram of Sustainability Course Topics]

- Climate Change
- Natural Resources
- Environmental Policy
- Pollution
- Urban Sustainability
- Conservation
- Agriculture
- Food
AWARENESS: STUDENT AWARENESS EVENT AND ONGOING EDUCATIONAL PROGRAMS ABOUT FOOD WASTE

Madison Grote, Sudarsana Addepalli, Conner Adams

STUDENT CONJECTURE

Through a large scale engagement or event associated programs, brought to campus with the purpose of educating on food waste, the college community will become more aware, and begin to engage in better food waste practices.

PROCESS

Both a singular campus event and an ongoing extracurricular student program were envisioned to promote awareness of food waste at UC. Existing UC campus student events were surveyed and case studies were conducted of student focused awareness events existing at other institutions. Program content was explored and waste measurement practices were considered, including UC Dining Service’s Lean Path program. Measurement and communications were designed and equipment specified for a ‘gaming’ approach in a competition among students to minimize food waste in UC Dining Halls. A social media and communications strategy was proposed to situate the competition among first-year student residence halls with the support of a recognition and awards program.

ENTERTAINMENT

CONCERT
KING OF DANCE
ATHLETIC
sumo suits
hamster runners
HAND-MADE/TOURNAMENT report online?
MOVIE SHOWING
SOCIAL MEDIA
projection on
FACE
ZURGE HAPPENS ON SIGMA SIGMA
MOVIE SHOWING

EDUCATION

CHANGING HABITS - BEHAVIOR
EXPIRATION DATES ARE GUIDELINES
FOOD JOURNALS
PROMOTE NAP KIT AND ETIQUETTE
EDUCATION ON HOW TO TRANSFORM FOOD FOR DISTRIBUTION/CONTROL
DEALING WITH LEFTOVERS
FOOD WASTE FOR UNADJUSTED TYPES OF FOOD TO BUY
FROG MANAGEMENT
SUSTAINABILITY/COOK

PROPOSAL

Create a student competition among UC residence halls to minimize food waste generated by student dining hall practices.

Create a student competition among UC residence halls to minimize food waste generated by student dining hall practices. This is a voluntary program using weigh stations in UC dining halls and a real-time competition results display system deployed in dining and residence halls. A campus-wide kickoff event would be organized with a concluding awards program to support the semester long weekly competition. 6400 first-year students occupy UC residence halls and would be eligible for participation in this program.
PROJECT 3

AWARENESS: FOOD WASTE POLICY FOR STUDENT ORGANIZATIONS

George Encarnacion, Brandi Thomsen, Addi Smith

STUDENT CONJECTURE
If a waste free policy is enforced at UC, then the university will see a dramatic decrease in the amount of food wasted from students, student organizations, and faculty, thus, creating a greener campus culture.

PROCESS
This proposal aims to change the culture of student life by raising awareness of the impact of food waste by designing and putting in place an official university policy on food waste. Students and existing student organizations were surveyed to determine food waste volume and willingness to adopt a food waste policy. Case studies were conducted of similar policies both at UC and at other institutions. Model policy form and UC implementation procedures were researched. A model policy was drafted and tested with UC administrators and student organization leadership. Finally, an implementation and marketing plan was developed for branding and communications strategies for the policy.

WHY POLICY NEEDED?
- 22 million lbs of waste from UC waste in one year
- 4,000 lbs of food waste that UC students generated
- 142 lbs of food waste generated by students in one year

THE ACT OF BEING WASTE FREE UC COMPLIANT

An official University policy to be adopted by student organizations of all types pledging to eliminate food waste in their events.

PROPOSAL
An official University policy will be adopted by student organizations of all types pledging to eliminate food waste that results from student organization activities. The policy will be incorporated into the UC student organization handbook and the student athlete handbook. Policy implementation will include incentives for student organizations to conform. According to student report data, about 4000 pounds of food are estimated to be wasted annually at student organization events. Awareness and a policy for student organizations has the potential to reduce this quantity.
STUDENT CONJECTURE
If student organizations are educated to use online communications to manage their excess food, then more food can be redistributed to students and less food waste will be generated on campus.

PROCESS
Student research included identifying the extent of food waste occurring from student organization events through surveys and interviews. Case studies of similar campus communications and redistribution systems were documented. UC campus student communications platforms and mobile apps were examined for functionality and potential adaptation for use. Procedures for using the communication platform and collection of unused food were designed. Finally a concept for “shared tables” was developed for distributing leftovers to collection locations throughout campus.

THE CORQ APP
Recently added to University of Cincinnati’s campus, Place for student organizations to post about events. Can put “Free Food” tag on events. This aspect can be purposed to advertise left over food

1700 servings wasted
1030 total org events
95% events have waste
Yearly Estimate of events with Food Wastage

PROPOSAL
Utilize an existing student communication platform, the CORQ mobile app, to facilitate the reuse of leftover food produced by student organizations. This mobile app will allow students to post and seek availability of left over food from student events. A network of monitored “shared tables” was also proposed to function as drop off locations throughout campus for easy student access. According to student report data, about 4000 lbs of food are estimated to be wasted annually at student organization events. Facilitating rescue and redistribution of left-over food generated at student organization events has the potential to reduce this quantity significantly.

STUDENT ORGANIZATION LEADER MAKES THE POST ON CAMPUS LINK

STUDENT ORGANIZATION LEADER WAITS FOR THE STUDENT TO PICK UP THE FOOD

STUDENT PICKS UP THE FOOD

A network of monitored “shared tables” to function as drop off locations for food left over from student organization events

CHART TITLE

Have Corq App

Do not have Corq

Do not Have

57%

43%

CHART TITLE

Would Download

Wouldn’t Download

Might Download

Might Download

20%

6%

74%
STUDENT CONJECTURE

If a system involving the safe packaging of unserved food from dining halls and efficient redistribution to local nonprofit organizations is implemented at the University of Cincinnati, then the amount of food waste produced by dining halls would decrease and the amount of food available to the hungry in the greater community would increase.

PROCESS

Students studied Dining Hall practices, consulted UC/Aramark staff, and surveyed students about food waste awareness and interest in volunteering in a student organization for the redistribution process. Case studies of similar programs were considered, safe food handling processes were reviewed, along with existing regulations and limitations on food reuse. Local nonprofits were profiled and solicited to receive rescued food. Finally a distribution system was designed to be operated by a student organization.

Types of Food to be Rescued from Dining Halls

- Leftovers are recovered from the dining hall
- Food is safely packaged and ready for transport
- Student volunteers transport the food
- Food arrives at nonprofit safely and ready to be eaten

The whole process is facilitated through student volunteers

Excess food is separated and packaged from Dining Halls and UC then distributed to campus proximate non-profits by student volunteers.

POSSIBLE ROUTES IN 1 MILE RADIUS

- St. Pauls Home
- St. Georges
- Corryville Elementary
- UC Bike Kitchen
- UC Student Union
- UC Recreation Center
- Bearcats Pantry
- Volunteer Sources

ON THE GREEN

POSSIBLE ROUTES IN 1 MILE RADIUS

- St. Pauls Home
- St. Georges
- Corryville Elementary
- UC Bike Kitchen
- UC Student Union
- UC Recreation Center
- Bearcats Pantry
- Volunteer Sources

ORGANIZATIONS

- UC Food Forward (our Organization)
- Other UC Organizations
- Bearcats Pantry
- Service Learning Corps

PROPOSAL

Trained and paid staff from UC Services/Aramark/Service-Learning Corp separate food to be rescued in the Dining Hall back-of-house prep and delivery area. The food is packaged, blast chilled, and stored in accordance with certified standards to await distribution. A corps of student volunteers then make timely distribution to campus proximate non-profits that have been certified for safe food handling processes. With 2.5 million meals served annually (UC Dining Services 2019), even a fraction of rescued food available would meet or exceed the needs of receiving nonprofit.
RESOLVE: ENHANCING THE CAPACITY OF THE BEARCAT PANTRY THROUGH FOOD RECOVERY

Abbi Wells, Ahmed Ashraf, Seth Reichebach

STUDENT CONJECTURE
If a reliable collection and distribution system is put in place to divert potential food waste from nearby sources to the Bearcat Pantry and local service provider Little Sisters of the Poor, then the quantity of food recovered will increase and the number of hungry UC students should decrease.

PROCESS
Students contacted two local grocery stores to determine quantities of weekly food waste. The function and capacity of the Bearcat Pantry was assessed. Students researched student food insecurity and UC student volunteer capacity. Research was conducted in potential distribution systems and transportation modes for student volunteers. Case studies were provided on similar student-run campus food rescue and redistribution programs.

PROPOSAL
Create the “Bearcat Food Recovery Network” (BFRN) to rescue food from retail food outlets close to campus for redistribution to the Bearcat Food Pantry. The BFRN, a volunteer student run distribution system, is designed around a regular weekly walking route schedule for student volunteers that integrates collection and drop-off around habitual student pathways to and from campus. Distribution capacity includes custom insulated branded backpacks to promote issue awareness. Students estimated that more than 80 lbs of food could be rescued daily from identified retail sources.

RETURN RECOVERY PACKS
Pick up recovery pack from UC Bike Kitchen

STUDENT VOLUNTEERS
Record Recovery Metric

DISTRIBUTION CAPACITY

sources - grocers

produce and raw foods

Dry Goods

PROPOSED PROGRAM
Create the “Bearcat Food Recovery Network” (BFRN) to rescue food from retail food outlets close to campus for redistribution to the Bearcat Food Pantry.

VOLUNTEERS NEEDED
60 hours/week

VOLUNTEERS SUPPLY
360 hours/week

Return Recovery Packs
Pick up recovery pack from UC Bike Kitchen

Volunteer supply and demand based on current volunteering metric obtained from the UC Center for Community Engagement and the estimated route times of the Bearcat Food Recovery Network. All routes are assumed to operate once daily.

FOOD RECOVERY ROUTES (DISTANCE VARIATIONS FROM 2-3 MILES)
IMPLEMENTATION PLAN

This proposed 12 month pilot implementation project revolves around the creation of a UC student run distribution system that rescues food from multiple locations in and around campus for reuse by food insecure students, the Bearcat Pantry, and local non-profit organizations. The program will rescue and redistribute food from four different sources. It will be supported with a multi-platform networked inventory and notification system for distribution and scheduling. The program will also be complemented by a social media based branding/marketing campaign as well as extracurricular and curricular engagements with students and faculty that will result in a robust campus/community presence and impact for Kroger ZHZW.

LOCATION 1
DINING HALLS

- Trained and paid staff from UC Services/Aramark/Coop separate food to be rescued in the Dining Hall back-of-house prep and delivery area. The food is packaged, blast chilled, inventoried, and stored in accordance with certified standards to await distribution to non-profits who can consume the food in a timely manner.

LOCATION 2
UPTOWN RETAIL FOOD OUTLET

- Campus near retail food outlets (Kroger, Clifton Market) set aside and inventory packaged food for rescue through in-store programs and processes that are already in place. Students arrange packets for student pick-up and assign deliveries in the networked notification system. This food will be delivered to the Bearcat Pantry and non-profit.

LOCATION 3
RESIDENCE HALLS

- New ZHZW "smart" surplus food collection bins are positioned in campus residence halls and in area private student apartment complexes to receive surplus packaged food. This component is supported by a networked notification system and will be promoted with an awareness campaign including social media, signage and marketing materials. This food will be delivered to the Bearcat Pantry and non-profit.

LOCATION 4
CAMPUS EVENT

- Salvageable leftover food from campus events of student organizations is available to students through an on-line (Campus Link) and app (CORQ) supported system. UC students are notified via CORQ app.

LOCATION 4
CAMPUS EVENTS

- Salable leftover food from campus events of student organizations is made available to students through an on-line (Campus Link) and app (CORQ) supported system. UC students are notified via CORQ app.

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AWARENESS AND CURRICULUM INITIATIVES

- The organization of a student advocacy organization is proposed to introduce resident students to this program.
- At least one ongoing engagement is proposed to create a 360° Waste Free campus that empowers students to minimize individual food waste in UC Dining Halls.

Innovative initiatives:
- A self-directed 360° Waste Free online learning course is offered.
- An annual interdisciplinary UC Forward ZHZW innovation course is offered.
- Interdisciplinary faculty collaborations are implemented to reach a larger student population. These faculty initiatives are designed to promote extracurricular and curricular opportunities and potential research partnerships centered on ZHZW.

PACKAGED SET ASIDE
NON PROFITS
STUDENTS ARRANGE INTO PACKETS
NETWORK NOTIFICATION SYSTEM
BLAST CHILLED
INVENTORIED
STORAGE
REDEPLOYMENT SYSTEM
UC ZHZW Food Rescue Distribution System: Student-led distribution service
- Campus near retail food outlets (Kroger, Clifton Market) set aside and inventory packaged food for rescue through in-store programs and processes that are already in place. Students arrange packets for student pick-up and assign deliveries in the networked notification system. This food will be delivered to the Bearcat Pantry and non-profit.

Curricular initiatives:
- A shell course with ZHZW core learning outcomes is proposed to introduce resident students to this program.
- At least one ongoing engagement is proposed to create a 360° Waste Free campus that empowers students to minimize individual food waste in UC Dining Halls.
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