



THE UNIVERSITY OF  
TENNESSEE  
KNOXVILLE

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THE UNIVERSITY OF TENNESSEE, KNOXVILLE

End Hunger FEED Change Report

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December, 2020

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## *The Issue*

Hunger is on the rise globally, compounded by unprecedented climatic changes and food price volatility, resulting in decreased food security and widespread instability in both conflict-prone and peaceful regions of the world. Unfortunately, these issues are expected to become increasingly challenging as we struggle to feed a projected world population of 9.7 billion by 2050.

Goals

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**End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

While many associate hunger with other countries, hunger is pervasive in our own communities including on campus. A recent study revealed that in the University of Tennessee System 33.8% of students were food insecure. This means, 1 out of every 3 students at the University of Tennessee identifies as food insecure (Wooten et al., 2019). This statistic is more than double the national household average of food insecurity (11.1% in 2018), and has been exacerbated by COVID-19 which has caused a spike in unemployment, and the loss of income and basic security.

College students who are food insecure are at greater risk for stress, anxiety, and depression, posing a threat to the welfare and academic success of UT students. For example, food insecurity is consistently associated with lower grade point averages, difficulty concentrating in class, and other negative academic outcomes (Bruening, 2017). Concerns such as absenteeism, student drop out, and declining graduation rates can also be perpetuated by food insecurity.

Given the global to local scope of this challenge, it is imperative UT as an academic institution organize and engage in efforts to decrease hunger and help to achieve the UN Sustainable Development Goal 2, Zero Hunger by 2030 (UNSDG, 2015).

The End Hunger - FEED Change initiative (EHFC) was launched in 2020 to bring visibility to this critical issue. The initiative seeks to raise awareness of hunger and bring together those who are addressing any and all aspects of hunger. By organizing within, UT can strengthen our position to connect local actions to the larger challenge of feeding a growing global population. The EHFC brings together students, staff, and faculty into a working group to gather information about how UT is engaging in ending hunger, and help to organize and facilitate more efficient uses of resources.

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## End Hunger/FEED Change

AN INITIATIVE ACROSS THE UNIVERSITY OF TENNESSEE SYSTEM



32% of UT Knoxville students are food insecure, more than double the state (13%) and national rates (12%).



Food insecurity =  
lack of access to  
adequate and  
nutritious food.  
(USDA)

### *UT and Hunger*

The EHFC has gathered information about the efforts being made on campus and beyond, to address hunger. There are a variety of efforts across campus and the state, to educate about hunger, as well as directly address the needs of those experiencing hunger:

- The Dean of Students established the annual **[Hunger and Homelessness Summit](#)** which seeks to educate students, staff, and administration about the issue of food and housing insecurity in higher education.
- The **[Big Orange Meal Share \(BOMS\)](#)** allows students to donate extra guest-meal swipes to the campus dining facilities for use by students experiencing food insecurity. Student access is administered through the Dean of Students which works closely with Aramark on the allocation of meal plan swipes.
- **[The Big Orange Pantry](#)** was established in late 2020, with generous support from donors and work from the Department of Nutrition and The Dean of Students, to serve as an on campus location for UT students.
- **[The Grow Lab](#)**, a campus garden and “living laboratory” that operates year-round, is operated by the Office of Sustainability. Produce is donated to Smokey’s Pantry and individual students, groups, and staff can cultivate a garden plot for service learning and hunger-alleviating causes.
- **[Smokey’s Pantry](#)** was established in January 2016 as an effort to help address food insecurity among students, faculty, and staff. The pantry is a collaboration between student government, Tyson House (the Lutheran and Episcopalian Campus Ministry), and FISH Pantry, with support from the Office of Student Life and others.
- **[The End Hunger Feed Change Initiative \(EHFC\)](#)** was organized by the Center for Global Engagement and receives support from a group of staff, faculty and students from across the UT campus that have come together to increase coordination of efforts to alleviate food insecurity on a local to global scale.

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- As food insecurity and food waste are closely linked, the Office of Sustainability wrote and proposed the [Zero Waste Commitment](#) which aims to divert 50% of the University of Tennessee, Knoxville's waste from landfills and incinerators by 2030 (Tarizzo 2020).
  - The [Culinary Institute](#) is working with a graduate student in Haslam College to map the food system on campus in order to address food waste that can be used to help address hunger.
  - Many of the organizations on campus hold food drives or other fundraising activities to support efforts to reduce hunger. In recent years, Progressive Students Association, S.P.E.A.K., Vols for Veggies, Student Government Association (SGA), and the Student Basic Needs Coalition (SBNC) have addressed food related issues with UT Dining Services and Aramark. The Office of Sustainability and Food Recovery Network have also been key actors in campus food recovery. In the 2019 - 2020 academic year alone, SGA, SBNC, and S.P.E.A.K. led food insecurity initiatives.
  - There are multiple gardens besides the Grow Lab that students can use. The [UT Gardens](#) also teaches about nutritional gardening to address hunger.

Beyond campus, the list of research and educational opportunities addressing food insecurity is vast, too large to list here. Many faculty have research addressing hunger in various parts of the world, and there are courses available to our students examining hunger and related issues. However, there are a few examples to highlight of how UT engages with hunger off campus:

- The UT Extension system works across the entire state, in all 95 counties. The [Department of Family and Consumer Sciences](#) works to address hunger across Tennessee, engaging directly with those suffering with hunger. A new Culturally and Linguistically Diverse working group has been established to help UT Extension improve their capacity to engage with all groups across Tennessee.
- UT's [Office of Community Engagement and Outreach](#) provides programs to engage faculty and students across various themes, connected to local organizations. Some of these organizations work to address issues of hunger.
- Unique to UT, is an endowed international center that addresses hunger at the global level. The [Smith Center for International Sustainable Agriculture](#) has the mandate to work to build teams of faculty to do research and come up with the solutions to address food insecurity across the world.

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There are impressive efforts being made to research and address hunger. However in order to improve UT's efforts there are some identified barriers that need to be addressed. Emergency interventions such as a food pantry and meal share programs are useful, however they need to be part of a larger strategy, taking a systems approach to how UT engages with hunger. Some ideas include:

► **UT JOINS PRESIDENTS UNITED TO SOLVE HUNGER**

This [university consortium](#) with the focus to address hunger locally and globally is something signed by the former Chancellor Jimmy Cheek that President Boyd or Chancellor Plowman could renew to show UT's support to addressing hunger.

► **EXPAND SNAP AWARENESS, EDUCATION, AND ENROLLMENT FOR UT STUDENTS**

Given the large amount of federal aid devoted to higher education, policy interventions and food assistance programs must be prioritized as a form of aid to secure student basic needs. Policy interventions like federal food assistance programs are the most upstream, long-term solution to food insecurity (Larin, 2018; Freudenberg et al., 2019). This includes SNAP enrollment and education materials being readily available and shared with students in on-campus departments such as the Work Study Office, One Stop, Student Health Services, and Dean of Students, and the Big Orange Pantry.

► **ALLOW SNAP TO BE UTILIZED IN CAMPUS GROCERS AND DINING FACILITIES**

Though historically SNAP has only been able to be used in campus stores and not in dining facilities, universities can accept SNAP EBT upon registration through the Food and Nutrition Service of the USDA. In addition to the permit, SNAP eligible locations will require a third-party software system and technology. The Restaurant Meal Program (RMP) is a SNAP extension which allows SNAP recipients to redeem their benefits for hot meal options. One example is the University of California system, that has established SNAP and RMP food service locations. The UC system uses CBORD and contracts Aramark. Therefore, the UC system is a useful comparison for the UT system's adoption of SNAP and RMP food service locations.

► **INCREASED COOKING EDUCATION**

Working with the Culinary Institute, and UTIA Extension, cooking programming interventions to expand individual knowledge, attitudes, and beliefs can be provided, and are necessary

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to address student food insecurity at the individual level. Even if students are given the resources to healthy food and cooking tools, an internal lack of competence or confidence in food preparation skills can serve as barriers to improved dietary habits, necessitating cooking classes, demonstrations, and educational material. Cooking efficacy could prove an invaluable tool for increasing food security across the student population, as the two factors seem to be inextricably linked based on self-assessment surveys (Knol, 2019).

► **IMPLEMENT A \$1 CAFE**

Alvarez (2019) found food insecure students were strongly influenced by price when purchasing food. The University of Kentucky (UK), an Aramark contracted institution, opened the [\\$1 Cafe](#) in April 2019 in response to campus food insecurity. Aramark offers an entree, two sides, and vegan options at the **\$1 Cafe**. Dining options are nutritiously balanced which is typically dissociated from affordability. The cafe operates Monday to Friday from 10am to 2pm. The **\$1 Cafe** is open to those who provide a valid student ID.

► **SUPPORT EHFC INITIATIVE**

There are many ways UT could support this initiative to address hunger. EHFC could serve as the central contact for efforts related to hunger and manage and organize the many initiatives addressing hunger.

-Building on the work being done by a Haslam College graduate student, a food system mapping project could be expanded to define the source, entry, modification, distribution, and disposal or reuse of food at UT. Food mapping can expose inequalities of food access. Data will inform decision-making, strengthen food system resiliency, and stimulate and support local food systems (Baker 2018). Defining UT's food system will require an interdisciplinary working group. Involvement of different departments and peoples will raise awareness of food insecurity and engage multiple stakeholders. Diverse engagement encourages democratic food systems which meet all people's needs (Barlett 2011). This would include UTIA as they produce food each year and donate much of it to food banks off campus. A better understanding of these processes could eliminate waste and help transition resources more effectively.

-Analytical or exploratory course projects related to food insecurity at UT will apply and strengthen academic skills. Real-world application increases civic engagement (Barlett 2011). Students will experience how to apply their education to societal issues - including hunger.

-EHFC could serve as the food policy group and would be suited to address food inequalities on campus. This could mean the addressing the purchasing of local food products, to stimulate the local economy (Barlett 2011). Aramark acknowledges the ecological and

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economic sustainability of local purchasing and intends to increase local purchasing (Aramark 2019). The Aramark and UT contract states all food purchases will be approved by UT. This working group could organize a Food Policy committee that would assume responsibility for all food purchases with emphasis on locally sourced food products.

► **EXPANSION OF GROW LAB**

Increasing urban food production can supplement local needs and provide experiential engagement with food security issues to students, faculty, and staff (Barlett 2011; DeWit 2014). The Grow Lab has one location and donates produce. Establishing new Grow Lab locations across campus will 1) produce nutritious food for the emerging campus food pantry, 2) provide food security skills to all participants, and 3) raise awareness for food security issues.

► **BASIC NEEDS CENTER**

Lack of knowledge and stigmas around institutional assistance are barriers to alleviating food insecurity. [Oregon State University](#) has demonstrated potential benefits to an academic institution by centrally locating all basic needs programs.

For example, in 2022, the Presidential Court Building will be vacated due to the opening of West Dining. The building will not be demolished and could be transformed into a Basic Needs Lodge (BNL). Services such as the Campus Food Pantry and OneStop Services could be relocated to the BNL. Additionally, the BNL could house services such as personal food storage, community cooking space, and cooking classes.

By organizing UT's efforts to address hunger through EHFC, administrators, policymakers, and students can be involved in the move toward implementing evidence-based interventions needed to address the multifaceted issue. Longer-term goals of this initiative include development of new educational opportunities with a multi-disciplinary focus that will draw students from across academic departments to explore and problem solve issues around food insecurity and hunger, including a minor or concentration in global hunger studies. The initiative could also provide some support to a sustained service learning opportunity that explores food insecurity and food systems at UT. Finally, as mentioned above, EHFC will strive to develop and support the implementation of university policies that address the food insecurity issues among our students.

This increased awareness of hunger, a major global issue, will help the world-class education provided by the University of Tennessee produce graduates who are not only technically competent, but also globally aware and socially engaged.

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APPENDIX

## Food 4 All Proposal

Food insecurity is a challenge for 32% of students at the University of Tennessee Knoxville (UTK). To reduce students' inability to address this basic need, the Culinary Institute is proposing a food recovery and distribution plan, Food 4 All, for the campus starting Fall 2021.

Food 4 All involves three components: food recovery, food transformation, and food distribution.

### **Plan for food recovery**

- Recover all usable food from Aramark on the UTK campus that would otherwise be discarded. Food will be recovered from dining halls, POD markets, campus catering, and sporting events.
- A refrigerated vehicle will need to be acquired and utilized to pick up recovered food from Aramark locations. A set route, pickup schedule, and pick up locations within each Aramark location will be established. Upon pickup all food will be tagged and labeled with the location, time, and ingredient(s) to ensure adherence to all food safety guidelines.
- All recovered food from campus will be directed to the Culinary Institute. The facility has multiple refrigerated coolers, easy access to the building and coolers for afterhours deliveries, and a commercial kitchen for food production to transform the food into usable meals.

### **Plan for food transformation**

- Utilizing the recovered food from campus, the Culinary Institute will transform the food into ready-to-heat meals. Food transformation will occur via academic class curriculums, campus groups and organizations, and volunteer opportunities in which students learn culinary skills while preparing meals.
- The ready-to-heat meals will consist of food items that are easy to reheat in a microwave oven or resident hall.
- Meals will consist of varying menu items that coincide with the season and product availability, as well as being nutritionally balanced.
- Meals will be packaged into microwavable containers that will have a 4 to 7 day shelf life. Each meal will be comprised of at least 50% recovered food. Other food will need to be procured to assist in repurposing the food and developing nutritionally-balanced meals.
- The goal is to produce at least 5,000 meals per academic year (approximately 150 meals/week).
- To meet food safety regulations, no individual will be charged for consuming the prepared meals.

### **Plan for food distribution**

- The Big Orange Pantry will serve as the main distribution hub for the meals. Smokey's pantry may also be able to assist in distributing meals when they are open.
- The refrigerated vehicle will be used to transport the ready-to-heat meals from the Culinary Institute to the Big Orange Pantry.
- All extra meals that are not distributed to students will be directed to local organizations who can distribute the food immediately.

## Food 4 All: Food Recovery Program Feasibility Report

**The Problems:** Up to 32% of UTK students are food insecure and over 261 tons of food are wasted every year on the UTK campus.

**The Solution:** Recover useable food from campus facilities, utilize the recovered food as teaching material in the culinary program, and redistribute the resulting ready-to-heat meals to students at campus food pantries. Additional needed resources for this program include a refrigerated vehicle, plastic food storage containers, a food labeling system, additional food, and an employee to collect and distribute the food. The program will have initial costs of approx. \$43,432.00, mostly due to the cost of the vehicle, and have a yearly variable cost of approx. \$48,000, mostly for wages, food containers, and gas.

- Recover usable food from UTK campus outlets run by Aramark
  - Recover from sporting events and caterings on campus
  - [map of campus and Aramark locations](#)
- Use recovered food as part of the Retail, Hospitality, and Tourism Management (RHTM) Culinary classes to prepare ready-to-heat meals for students at the UTK campus
  - HTM 101, HTM Advanced Food Techniques, HTM 445, HTM Baking
- Distribute ready-to-heat meals through Big Orange Pantry
  - Available to all UTK students, staff, and faculty in need.

**Purchase Recommendations and Projected Costs: The items bellow will need to be funded in order to initiate the project.**

### **Upfront Initial Costs: \$43,432**

- Refrigerated Van (Dodge Ram Promaster 2500) - \$22,696
- Reefer Installation on Van (Delivery Concepts Inc.) - \$13,161
- Date Code Genie Lite (label maker for food service) - \$1,000
- Digital receiving scale - \$75.00
- Plastic food containers (5,000 a year) - \$1,500
- Additional food and supply purchases from food suppliers and food banks - \$5,000

### **Yearly Reoccurring Costs: \$48,000**

- Gas – Approx. - \$500
- Vehicle maintenance - \$1,000
- Plastic food containers - \$1,500
- Employee - \$40,000
- Additional food and supply purchases from food suppliers and food banks - \$5,000

### **Reoccurring Cost Solutions:**

- UTK to implement a basic needs fee to the student tuition.

- A \$2 per person fee on tuition could sustain the program and provide food for students each semester. This fee would cover labor for faculty and student workers, food containers, and additional food needed to prepare and enhance the meals.
  - 2017 enrollment was 28,321
    - That could be \$56,000 in funding to support the basic food needs of students.
- Additional food costs – We will need to supplement recovered food with basic food staples and additional food items on a weekly basis.
  - Partner with UTK agriculture to collect foods from the UTK farms and gardens
  - Partner with local gleaning organizations and create a gleaning club on campus to have volunteers collect extra produce from local farms
  - Partner with local 501 C 3 organization to be able to request donations from Second Harvest Food Bank
  - Find food distributors to donate food
  - Find financial donors to help supplement the program
- Labor
  - Hire an AmeriCorps member to handle the food recovery and distribution
  - Utilize federal work study students

**The Impact:** The goal is to produce 5000 meals during the school year. It is assumed that the program could divert over 4000 pounds of food waste a year. Since the Food Recovery Network was able to divert 2000 pounds of food from only three football games in 2020, we think this estimate is a minimum. With these assumptions the program will have the following additional impacts:

**Economic:** With the average value of every pound of food the program will replace calculated, based on current food recoveries, at \$1.98, the program will offset and supplement the culinary institute with \$3,968 in food value every semester. To put this in context, the culinary budget for the 2019 fall semester was \$14,330, so this program could replace over a quarter of budgeted costs and increase the overall amount of teaching materials.

**Sustainability:** Though this program will only divert about 1% of the 261 tons of food waste generated on campus, it establishes a circular food economy at UTK. This circular economy not only creates the tangible benefits mentioned above but also reduces the carbon footprint and water usage necessary to create wasted food. This will make UTK more economically and environmentally sustainable and more prepared for the future. This program is also an initial step towards developing future food recovery and redistribution efforts on and off the UTK campus.

**Scalability:** This program can serve as a model that can be scaled to other universities in the state and the nation. UTK can become a leader in college food recovery and distribution.

**Marketing:** This food recovery and distribution program, with the added academic culinary arts portion, is a unique, innovative program. Other universities have food recovery programs with volunteers that help distribute the food, but there is no program that provides experiential learning to students in the area of food recovery, transformation, and distribution. This unique learning may draw new students to UTK, increasing enrollment.

**Campus Involvement and Support:** This program will unify UTK efforts on food recovery and distribution, and will include the following:

- College of Education, Health, and Human Sciences
  - Department of Nutrition
  - Department of Retail, Hospitality, and Tourism Management
    - The Culinary Institute
- The Office of Sustainability
- The Food Recovery Network
- The Student Basic Needs Coalition
- Big Orange Pantry
- Smokey's Pantry
- Aramark
- End Hunger FEED Change
- SGA
- Office of Student Engagement
- UT Extensions