



# Farm to Institution

## Highlighting Local Food Procurement at the University of Connecticut

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# Executive Summary

Local food procurement by universities and colleges is increasing, and Farm-to-Institution (FTI) programs provide benefits to producers, the local community and the end consumer (DeBlieck et al., 2010; Lynch et al., 2015). While college students value food that is produced sustainably and locally (Feenstra et al., 2011), limited research has been conducted on student willingness to pay more for meal plans at dining halls that serve local food. Additionally, university dining can serve as a mechanism to address food insecurity on campus. Institutions have begun implementing services to support food insecure students, including the provision of “swipes” that provide students access to free dining hall meals. When dining programs sustainably procure food this can impact all students, especially those facing resource constraints.

Researchers interviewed dining services personnel, local producers and produce distributors to quantify local procurement activities and impacts. Students were then surveyed on their awareness of local procurement at the university, preferences for local procurement, willingness to pay for increased local procurement and awareness of the dining “swipes” program. We also used the two-item Hunger Vital Signs instrument to identify food insecure students.

## Findings

- Nearly 40% of food at the university was locally procured.
- Dining Services’ sustainability programs are poorly marketed to students, leading to negative perceptions.
- While students expressed a desire for locally procured products, 50% were unwilling to pay a premium.
- Only 12% of food insecure students were aware of the ability to request dining “swipes”.

## Recommendations

**Several key recommendations arising from this study are relevant to food distribution.**

- Dining services’ should devote resources to identifying and marketing locally procured food.
- The structure of university procurement excludes small, diversified farms so UConn should consider collaborating with a food hub or other partner.
- We suggest that “swipes” programs be better publicized and structured to increase access to sustainable food for all students.





# Introduction

The roots of the University of Connecticut's connection to agriculture run deep, and many don't realize that UConn was founded as Storrs Agricultural School in 1881. Today UConn works to cultivate new and old relationships with farmers through education, extension, and food purchasing. UConn Dining Services (UDS) has been in operation for 137 years and serves over 180,000 meals a week. UDS oversees eight dining halls, five cafes, four retail food stores, two food trucks, the Union Market, the Dairy Bar, and Spring Valley Student Farm. UDS strengthens UConn's agricultural ties through its use of the Animal Science Department's products in the Dairy Bar, Spring Valley Farm produce in the dining halls, and Farm-to-Institution (FTI) procurement. FTI is a shortened supply chain process for food procurement, and this study aims to analyze and highlight the practices of UConn Dining Services' FTI program. Recommendations from the findings in this study are made in the best interest of strengthening the relationship between the UConn Community and its farmers.

FTI programs are becoming more common and are established by local producers to supply their products to schools, hospitals, senior facilities, correctional facilities, and colleges. In particular, local food procurement by universities and colleges is increasing (DeBlieck et al., 2010), and these connections between producers and institutions are beneficial to the local economy, the communities involved in the programs, and the education of the consumer (Lynch et al., 2015). Further, college students value food that is produced sustainably and locally (Feenstra et al., 2011). Through FTI programming students learn the story of the farmer and the food, which can lead to greater consumption of produce, allowing farmers to sell larger quantities to bigger buyers.

Localization has become an increasingly popular alternative to mainstream food systems that are dominated by large, private corporations that can produce negative environmental and social externalities (Donahue et al., 2014; Aspenson, 2020; Chrisman, 2021). With localization, social and environmental goals are prioritized over economic goals. However, obstacles to localization include a lack of economic organization and scale-based structural problems resulting from the mismatch between the small size of local producers and the large demand for institutions (Cleveland, 2014). Yet the buying power of these institutions means a shift in their purchasing can have a large impact on local producers.



## Results Preview

We find that while approximately 30% of Dining's procurement is locally produced, this information is not well-publicized to the university and the local community. Only about 50% of UConn students know that UConn serves local food in Dining Halls. Students have a desire to learn about where food is being sourced, as 78% of students want to know about sustainable practices by Dining Services. Henceforth, efforts in marketing information about the work done by Dining Services managers to procure local foods should be increased.

With a large agricultural program within CAHNR, and many student-led organizations driven by goals for increased agriculture and sustainability on campus, highlighting the work already being completed would instill a sense of pride in students and producers working with UConn.



# Literature Review



## Benefits of FTI

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Farm-to-school programs can have economic benefits for the local community (Tuck et al., 2010; Kane et al., 2011; Bauman and Thilmany McFadden, 2017) and individual producers (Lynch et al., 2015; Long et al., 2021). A positive feedback loop can be created between a farm and an institution when there is transparent and frequent communication. For instance, when farmers selling to Residential Dining Services (RDS) at the University of California Santa Barbara (UCSB) increased the consistency and quality of products delivered in response to RDS preferences, the size and frequency of orders from UCSB correspondingly increased. Farmers were then able to gain enough financial security to lease and plant crops influenced by the demand of UCSB, which was able to grow its ability to take larger volume orders (Cleveland, 2014). While institutional sales are only a small part of farmer sales, they can allow for diversification and serve as an outlet for surplus products (Fitch and Santo, 2016). Additionally, for many farmers, the biggest reward is being able to educate and interact with students while delivering products (Berkenkamp, 2011; Thompson et al., 2014; Matts et al., 2015). As education for both the producer and consumer is important for a mutually beneficial relationship (Heiss, 2014), displays and information about local food can pique student interest, and encourage positive change towards procuring more local food.



## Barriers to FTI

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The FTI supply chain is shorter than the traditional supply chain and often involves more organizational efforts. Thus the “story” of local food would not be possible without the involved transactional costs of logistical difficulties for both farmers and producers (Conner, 2014). Many barriers exist for both farms and institutions within FTI programs. Farms will not always have the infrastructure needed to supply food to all the dining halls at universities. This can include a lack of refrigerated trucks for distribution, an inability to provide the same amount of product to each dining hall, or constraints due to the seasonality of certain products. A university with multiple food service venues may have required product delivery timetables that are incompatible with producer schedules. Knowledge gaps in dining services staff members have also proven to be a barrier in FTI programs, and staff members who prepare food may reject products for being too difficult to work with (DeBlieck, 2010). Product appearance is important to dining staff, and products that do not match their criteria and are considered unacceptable require extra time to be culled. However, the quality of products can be linked to the quality of communication between a farm and an institution. For instance, farmers selling to Residential Dining Services (RDS) at USBC had to learn to package products more carefully to keep the quality up to the RDS standards and have the exact amount ordered ready for pick up at the agreed-upon time (Cleveland, 2014).

Many institutions outsource their dining operations, which entails developing contracts with a food service management company that purchases 80-100% of food items from their list of approved vendors. Three primary food service management companies exist that serve higher education institutions: Sodexo, Aramark, and Compass Group. Outsourcing food service to a management company can make it harder to implement local food procurement (Fitch and Santo, 2016) and food management companies incentivize or require purchases of products from approved vendors, which can limit the ability to procure from local producers or cooperatives (Obadia, 2015). In contrast, a self-operated dining program allows for more flexibility. Institutions with self-operated dining programs will still contract with, and purchase from, food service management companies, but all purchasing decisions are made in-house (RFC Impact Report, 2017).



## Defining Local

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There is no set definition for “local”. In a case study completed by Farm to Institution New England (FINE) in partnership with the University of New Hampshire (UNH), “local” included “any food that is farmed, raised, caught, or manufactured within 250 miles of campus” (FINE, 2016). However, FINE also states that definitions of local can vary depending on institutional preferences and values. Many institutions define “local” as within the region either by distance or regional/state boundaries. In a survey completed by FINE (FINE Study, 2017), 29% of New England colleges reported that they define “local” as within 250 miles. Other definitions of “local” included within the state (27% of colleges), New England (26% of colleges), or no definition at all (4% of colleges). In creating their own definition for local, many campuses choose to align with existing sustainability metrics such as the Association for the Advancement of Sustainability in Higher Education’s (AASHE) Sustainability Tracking, Assessment & Rating System (STARS) or the Real Food Challenge Calculator.

# Current Regional and National FTI Efforts

## Real Food Challenge

- National organization founded in 2008
- Dedicated to changing food procurement in higher education
- “Real Food” is “local and community-based, ecologically sound, fair, and/or humane”
- Created the Real Food Campus Commitment
  - Institutions pledge to meet or exceed sourcing 20% of their food budgets from Real Food verified sources by 2020
  - A student-led Real Food club or working group is established on each campus
  - 82 colleges and universities participating as of October 2018
- Verify food sources through the web-based “Real Food Calculator”
  - Students import purchasing data provided by their dining services operations
  - Students use the calculator to evaluate records based on Real Food Standards
  - Tracks the patterns of local and sustainable purchases and progress over time
- Institutions such as the University of Vermont (UVM) had academic classes partner with Real Food Challenge and the established campus Real Food working group
- Of the 82 schools that signed onto the challenge, 16 had met the 20% threshold
  - Including UMass Amherst, UVM, Wesleyan and Smith in New England
- There have been no updated, post-2020 Campus Commitment goals
  - Could potentially be due to the university closures and supply chain shortages caused by the COVID-19 pandemic.

Sources: Toong and DiStefano, 2016; RFC, 2017; RFC, n.d.



## FINE

Farm-to-Institution New England (FINE) is a “six-state network of nonprofit, public, and private entities working collaboratively to achieve a mission of mobilizing the power of New England Institutions to transform the food system”. FINE collaborates with institutions such as K-12 schools, hospitals, correctional facilities, colleges, and universities. Projects completed by FINE focus on building networks between stakeholders, communicating with external audiences, and providing tools and resources (FINE, 2017). FINE is home to the New England Farm & Sea Campus network and has completed research such as the Sea to Campus Case Study at UNH and other institutions. Each year FINE holds a Food Summit to bring together Institutions to showcase their work. The University of Massachusetts Amherst has previously hosted the Food Summit on its campus to showcase its dining as a living case study (Toong and DiStefano, 2016).

# FTI Programs at Other Schools

## University of New Hampshire

Student participation is essential for the success of FTI programs. At UNH a group founded by students called “Slow Fish UNH” collaborated with UNH dining and other campus groups to plan a Sustainable Seafood Dinner. The group was also able to get UNH to commit to purchasing local seafood and signing onto the Slow Fish Principles which were created by the students. Efforts made by the group formed new connections with local fishing vessels and UNH dining services and encouraged dining managers to use sustainable alternatives of underutilized fish species in meals (FINE, 2016).

## University of Massachusetts Amherst

At UMass Amherst a student chapter, called the Food System Working Team (FSWT), from the Real Food Challenge campaign works closely with dining services in supporting sustainable goals. The FSWT is composed of students, faculty, staff, and local food entrepreneurs who all represent the stakeholders involved. The committee works to develop food policies and multi-year action plans (Toong and DiStefano, 2016). Transparency between students, dining staff, and dining services management is a crucial component of a successful FTI program. Universities such as UMass Amherst and UVM who are signed onto the Real Food Commitment used the Real Food Calculator which requires students to audit dining subcontractors.



## University of Vermont

The UVM chapter of the Real Food Challenge is known as the Real Food Working Group (RFWG). Certain official positions exist within the RFWG for students such as the Real Food Calculator Intern. During the summer of 2016, the UVM Dining Sustainability Manager worked closely with the Real Food Calculator Intern to analyze each of UVM's dining venues for Real Food data and create a progress report assessing how each dining unit could increase Real Food procurement. To familiarize chefs with the Real Food Challenge, meetings were held between the Real Food Calculator Intern, the UVM Dining Sustainability Manager, and the head chef and manager for each dining unit. Participants assessed the reports drawn up by the Calculator and provided strategic recommendations on integrating more Real Food into the individual dining halls. The idea of students having open access to audit dining halls might cause apprehension in dining services staff. The UVM chefs and managers provided positive feedback on student inclusion in the purchasing process and were excited to see their work recognized as part of a greater food movement on campus (RFC Progress Report, 2017).



## Iowa State University

The inclusion of dining hall staff such as chefs, managers, and servers is just as important in the inclusion of students in the purchasing process. At Iowa State University (ISU) in 2007, dining services created a Farm to ISU program. This initiative implemented a study to measure the knowledge gap in food service staff and how it played a role in attitudes toward local food procurement. After an initial pre-survey, an awareness program was created for staff to further develop their knowledge of local food. Three monthly Farm to ISU informational posters were displayed in staff break rooms outlining different aspects of Farm to ISU, and fliers were made available for staff to take. A presentation was further created for two staff development workshops that included a local food guest speaker, a tasting of local milk, and a lecture on the Farm to ISU program. The post-intervention study survey revealed an increase in positive attitudes toward Farm to ISU and expanded knowledge about the program. The study demonstrated that staff members were comfortable with an increase in local food purchases (DeBlieck, 2010). The success of any FTI program comes down to the chefs and food servers of institutional dining services. Staff members need to feel appreciated so they are more willing to take on new tasks to run an FTI program. Staff with an increased knowledge of local food develop a passion that can ensure the longevity of FTI programs.

# Food Insecurity on University Campuses

Food insecurity across U.S. college campuses has been a growing concern that has only been exacerbated due to COVID-19 (Owens, 2020). The U.S. Department of Agriculture (USDA) defines food insecurity as “the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (USDA, 2022). Food insecurity often gets defined along a spectrum of severity, which the USDA characterizes based on household responses to a food security module (consisting of 10 questions for adult households or 18 for those with children). In a study conducted across eight U.S. college campuses, 19% of students were food insecure and 25.3% were at risk of being food insecure according to USDA standards (Zein, 2019). Colleges and universities have long been searching for ways to mitigate food insecurity on campus, and an increasing number of schools have adopted more sustainable initiatives for tackling food insecurity (Barlett, 2011). Food insecurity has been associated with poor academic performance, decreased retention, and lower graduation rates (Weaver, 2019).

Moreover, while food insecurity is more prevalent among college students than in the general population, non-White students are even more likely to suffer from higher rates of food insecurity (Zein, 2019). Thus, by understanding the state of food insecurity on college campuses, colleges and universities can take an active role in mitigating food insecurity among students, and create an inclusive food environment targeted at food insecure students.



The prevalence of food insecurity in the state of Connecticut is approximately 12% (Zigmont, 2020), which is in line with the national average of food insecurity of 10.7% (USDA, 2022). On February 14, 2020, UConn submitted a report to the members of the Higher Education and Employment Advancement Committee of the Connecticut General Assembly. The report detailed food insecurity at the University of Connecticut as part of a review conducted by the Committee as part of Special Act 19-25, An Act Concerning Food-Insecure Students at Public Institutions of Higher Education. Using a ten-item instrument developed by the USDA, UConn assessed food insecurity amongst students and reported the use of emergency funds and efforts being made to assist students. The survey conducted by UConn used data from 2,506 respondents, representing about 10% of the undergraduate population. The survey was conducted on all of UConn’s campuses: Storrs, Hartford, Stamford, Avery Point, and Waterbury.

**Across all of the campuses over one-third of respondents (38%) reported low or very low food security**, with UConn Stamford and Waterbury having particularly high rates of food insecurity. Storrs reported 35% of students demonstrating low or very low food security, followed by Avery Point with 46%, Hartford with 47%, Waterbury with 62%, and Stamford with 67%.

In addition to surveying students on food insecurity, the report included detailed descriptions of the services UConn offers to students. The Students First Fund, established by the UConn Foundation, is funded by donors and helps students experiencing financial difficulties. From Summer 2018 to Spring 2019 a total of \$148,893 was distributed to 102 students, with an average award of \$1,500. In 2019 UConn established the UConn Swipes program to ensure food-insecure students have access to UConn dining facilities. The Dean of Students Office works with Dining Services to give students “swipes” into the dining hall via a Community meal plan. Qualifying needs-based students receive 25 swipes into dining halls, equivalent to 25 meals or visits. The Swipes program is funded by students who donate swipes during select times in the semester. Swipes are converted to the cash value and put into an account used to purchase Community meal plans for food-insecure students. During Fall 2019 a total of 17 students received meals through the UConn Swipes program. Since the program is needs-based students interested in participating must visit the Dean of Students office and complete a needs assessment.

However, in an analysis as to whether current emergency resources were “sufficient to meet the needs of all students at the institution experiencing food insecurity,” the report concluded the answer was no. Instead, it was determined that UConn should consider seeking additional resources for food-insecure students to obtain a meal plan, gain access to UConn Swipes, and provide food at regional campuses through the creation of a food pantry or service (UConn, 2020b). Additional programs at UConn Storrs not mentioned in the report include UConn Faith, Husky Market, and the subcommittee for Food Insecurity. UConn Faith works with the Dean of Students and the Swipe Out Hunger Program, a nationwide organization to stop food insecurity amongst college students, to provide resources to students. UConn Faith also provides listings for local food pantries for students on all campuses.

The Food Insecurity Task Force supported by USG also distributed “The Garden Box” during Spring 2022 through the USG Instagram (@usguconn). These free DIY herb growing kits were made available to 300 students on a first-come, first-serve basis. The boxes were designed to serve as a multidimensional tool that provides students with the means necessary to combat food insecurity at a foundational level. Students are supplied with everything needed to conduct small-scale gardening giving them the knowledge to feed themselves which can be uprooted and carried throughout their lives.





# Methodology

The goal of this project was to holistically assess UConn's local procurement practices by understanding the motivations and challenges of suppliers to Dining Services, the barriers faced by small producers, the perspective of Dining Services' staff, and students' opinions and awareness of local food served at dining halls. We conducted interviews with key stakeholders and personnel and implemented a student survey. Additionally, given UConn's initiatives to support food insecure students, and the role that Dining Services can play, we included food insecurity measures in the survey to analyze how that interacts with local food preferences.

## Semi-structured Interviews with Dining Services Personnel

**Tracey Roy (Interim Executive Director) and Managers from all Eight Dining Halls.**

Question topics included:

- How has UConn's local food procurement changed over the years
- The impact of COVID-19 on Dining Services
- Overview of the various roles and positions within Dining Services
- Managers' awareness of UConn's local food procurement
- Openness to improving and marketing efforts to source locally within Dining Services

## Semi-structured Interviews with Local Producers and Distributors

**Jamey Lionette**, Sustainable Seafood Program Developer at Red's Best Fish Market

**Shannon Cercone**, Marketing Director at Omar Coffee Company

**Devin Sardilli**, co-owner of Sardilli's Produce (UConn's primary produce distributor)

**Eric Hendry**, Owner of Blue Hill Orchard (Producer who sells through Sardilli's)

Question topics included:  
**Susan Mitchell**, Owner of Cloverleigh Farm (Producer who does not supply UConn)

- What motivates producers to supply their food to UConn
- Potential struggles encountered by local suppliers
- How suppliers work with UConn
- How small farms can sell to UConn or its distributors
- Barriers to entry for small farms

## Student Survey

Survey questions included:

- Students' living situation and dining hall utilization
- Satisfaction with UConn Dining, knowledge of current practices and preferences for local procurement
- Utilization of a payment card mechanism to assess student willingness to pay for an increase in meal plan prices if UConn were to procure 20% of its food locally (following Porter et al., 2017)
- Student awareness of marketing material
- Food insecurity status and awareness of UConn's Swipes program. Given the respondent burden associated with the USDA's ten-item scale, we follow other researchers in university contexts in adopting the validated 2-item Hunger Vital Items instrument to assess food insecurity (Hager, 2010; Bruening et al., 2016; Robbins et al., 2022).
- Demographic characteristics

The online Qualtrics survey was targeted to UConn Storrs students in Spring 2022. The survey was posted within the Student Daily Digest, which is distributed through email to all UConn students. Additionally, researchers promoted the survey at the UConn Earth Day Spring Fling, an annual celebration of sustainability held on the UConn Storrs campus on April 20, 2022. Finally, researchers posted flyers with a survey link in various buildings within the UConn Storrs campus. The study was approved by UConn's Institutional Review Board and all students provided informed consent before starting the survey.



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# Results



# UConn Dining's meal plan prices are lower or on par with other land grant universities in New England.

	Dining Operation	Least Expensive	More Expensive		Most Expensive
<b>UConn</b>	Internal	<b>Custom Plan</b> <b>\$2,855/semester</b> Unlimited Access to Dining Halls 75 Flex Passes, No Points	<b>Value Plan \$3,010/semester</b> Unlimited Access to Dining Halls, 40 Flex Passes, 200 Points		<b>Ultimate Plan</b> <b>\$3,154/semester</b> Unlimited Access to Dining Halls, 35 Flex Passes, 500 Points
<b>UMass Amherst</b>	Internal	<b>DC Basic \$3,141.50/semester</b> 224, Total swipes (Include 9 Your Campus Meal Exchanges, 15 Guest Meals)	<b>Unlimited DC \$3197.50/semester</b> Unlimited Access to Dining Halls, No Guest Meals, No Dining Dollars	<b>Unlimited 250 \$3,468/semester</b> Unlimited Access to Dining Halls, 15 Guest Meals, \$250 Dining Dollars	<b>Unlimited 500 \$3,696/semester</b> Unlimited Access to Dining Halls, 15 Guest Meals, \$500 Dining Dollars
<b>UVM</b>	External	<b>Retail Point Plan \$2,284/semester</b> 1450 Retail Points, 25 Meals	<b>All Access Plan \$2,284/semester</b> Unlimited Access to Dining Halls, 150 Retail Points, 3 Guest Meals		<b>Flex Plan \$2,552/semester</b> 160 Meals, 900 Retail Points, 3 Guest Meals
<b>UNH</b>	Internal	<b>Core Plan \$2,372/semester</b> Unlimited Access to Dining Halls, 2 Guest Passes, 6 Meals To Go	<b>Campus Plan \$2,572/semester</b> Unlimited Access to Dining Halls, 6 Guest Passes, 16 Meals To Go, \$200 Dining Dollars		<b>Premier Plan \$2,672/semester</b> Unlimited Access to Dining Halls, 10 Guest Passes, 32 Meals To Go, \$300 Dining Dollars
<b>UMaine</b>	External	<b>Unlimited Plan \$2,672/semester</b> Unlimited Access to Dining Halls, 6 Guest Passes, 10 Meals To Go, No Dining Funds	<b>Unlimited Flex Plan \$3,016/semester</b> Unlimited Access to Dining Halls, 6 Guest Passes, 20 Meals To Go, \$150 Dining Funds		<b>Unlimited Flex Plus Plan \$3,266/semester</b> Unlimited Access to Dining Halls, 6 Guest Passes, 32 Meals To Go, \$400 Dining Funds
<b>URI</b>	Internal	<b>Unlimited Standard Plan \$2,450/semester</b> Unlimited Access to Dining Halls, \$15 Dining Dollars Weekly Allowance, 2 Guest Meals	<b>Unlimited Plus Plan \$2,625/semester</b> Unlimited Access to Dining Halls, \$45 Dining Dollars Weekly Allowance, 3 Guest Meals		<b>Unlimited Complete Plan \$2,825/semester</b> Unlimited Access to Dining Halls, \$90 Dining Dollars Weekly Allowance, 5 Guest Meals

Composed of eight residential dining units serving over 185,000 meals per week, UConn Dining supports one of the largest student populations in the country. UConn Dining also offers food and services through five cafes, three eateries, Union Street Market Food Court, a food truck, an ice cream shop, an ice cream truck, and two bakeries. Moreover, UConn Dining offers a range of services to support students including a convenience store, student farm, catering division, test kitchen, commissary, and central production kitchen making it one of the largest self-operated food service programs in the country. UConn Dining is also a top employer at the university, including positions of Kitchen Assistants, Chefs, Chefs Assistants, Bartenders, Catering Supervisors, and Catering Coordinators. UConn Dining Services is also one of the largest employers of students at the Storrs campus.



As of Spring 2022, there were three residential student meal plans: the Custom Plan, Value Plan, and Ultimate Plan. All meal plans include unlimited access to all residential dining units and flex passes to purchase items from Dining Services Cafes or select locations within the UConn Student Union. The Value Plan and Ultimate Plan also come with points that allow meal plan holders to purchase a meal in any dining hall for a guest and make purchases at most retail operations. Comparing mid-range plans across the New England land grant institutions, UConn's prices appear on par with those of comparable universities.



## UConn normally procures 36% of its food locally, though this has been negatively impacted by COVID-19.

Tracey Roy is the current interim Director of Dining Services and previously served as the Associate Director of Procurement, providing insight on the institutional history of local procurement at UConn. She has been employed at UConn for over 29 years, and as is true of most dining personnel interviewed, has worked in a variety of dining facilities, including Buckley, McMahon, North, Towers, and Whitney. Starting her career as a two-year intern she then went on to become Assistant Manager, then Manager, and finally Procurement Associate Director. As interim Director, Tracey is not only in charge of Dining Services, but also the catering department and the front of the house for the UConn Dairy Bar. She prioritizes procuring locally when possible, including non-food items; for instance, all uniforms worn by Dining Services personnel are purchased from a local company.

UConn Dining Services (UDS) is the largest consumer of locally grown produce in Connecticut. Since its establishment, UConn has been dedicated to having sustainable dining options while supporting a local food system. Unlike schools around the nation that outsource their dining through companies like Sodexo or Aramark, UDS is operated internally. At least one manager mentioned that being self-managed provided more flexibility to serve higher-quality sustainable and local food options to students. UDS implements a Local Roots program which allows them to connect with local producers and create interest within the UConn community in local food procurement.

### UDS Definitions of Local

- **Local Procurement** is food that was either purchased in CT or produced in CT
  - UConn works with Sardilli's in Hartford, CT to connect with local producers
- **Regional Procurement** is food from within a **250-mile radius**

Prior to COVID-19, UConn was procuring 36% of its food from the local region ranging from Maine to Pennsylvania, including within Connecticut. While this percentage fluctuates throughout the year due to seasonality, chefs will process and freeze fruits and vegetables in the summer for use the rest of the year, and incorporate winter roots into their menus

**As of February 2022, UConn procured roughly 20% of its food locally due to shortages caused by COVID-19.** A major pitfall that UConn has faced is producers within its supply chain not producing the quantity UConn needs, or producing any food at all with staff shortages. Specifically, UConn has worked with Longhini Sausage from New Haven, CT, Top Shell from Rhode Island, and Pineland Farms from New Gloucester Maine, all of which have struggled to keep up with UConn's demands due to pandemic-related staff shortages. As a result, UDS has been procuring less of its food locally in the past two years, not due to UConn looking to move away from local foods, but rather struggling to find producers who are able to keep up with UConn's demands.

UConn has consistently sourced its dairy locally through **Mountain Dairy** in Storrs, CT. UConn sources local specialty cheese from **Liuzzi Cheese** and is able to get non-dairy bakery products from **Instawhipped**, both located in New Haven, CT. UConn's coffee supplier is **Omar Coffee** out of Newington, CT. Though UConn has a poultry farm on campus, the farm cannot supply Dining Services with the necessary inventory. Instead, UConn purchases eggs from a farm in Connecticut through Sysco and sells the school's eggs at campus retail locations. On this note, UConn produces its own ice cream through its **Dairy Bar**, but due to an inability to keep up with Dining Services, UConn purchases ice cream from Giffords in Maine for its dining halls. Additionally, UConn can source well-known brands headquartered locally like **Bigelow Tea**, **Frito Lay**, and **Deep River Chips**.

# AASHE Reports

## UConn Dining's sustainable procurement is higher than that of other land grant universities in New England.

The Association for the Advancement of Sustainability in Higher Education (AASHE) inspires higher education institutions to lead the global sustainability transformation, with a mission statement that includes values of transparency, collaboration, hope, stewardship, innovation, courage, accountability, diversity, equity, and inclusion (AASHE, 2022). AASHE is home to the Sustainability Tracking Assessment & Rating System (STARS) which is a transparent, self-reporting framework for institutions to measure their overall sustainability. Member institutions can fill out the STARS report and earn points toward a STARS Platinum, Gold, Silver, or Bronze rating. Reporter Designation for STARS requires no minimum overall score, Bronze rating requires a 25 minimum score, Silver requires a 45 minimum score, Gold requires a 65 minimum overall score, and Platinum an overall score of 85+. STARS reports and ratings are valid for three years from the publication date but reports can optionally be updated each year. The overall STARS score is the percentage of available points earned plus up to four innovation and leadership points. The percentage of available points is based on overall academics, engagement, operations, planning and administration, and food services. Innovation and leadership points go to schools with exemplary initiatives.



Compared to its peer institutions, UConn has made great efforts to increase the sustainability of its Dining Services. Specifically, we see that 49% of UConn's food procurement qualifies as sustainably sourced according to the Sustainability Tracking Assessment and Rating System (STARS). AASHE "defines sustainability in a pluralistic and inclusive way, encompassing human and ecological health, social justice, secure livelihoods, and a better world for all generations" (AASHE, 2022). STARS seeks to translate this broad concept of sustainability into measurable standards for universities. UConn received a platinum rating in July 2020 citing its relationship with Quantum Biopower, the end of single-use plastic bags, and the launch of the Institute of the Environment in 2019. Consequently, we see other schools around New England score much lower on that same assessment. UConn spends roughly \$16 million on food a year, with 36% of that sent back directly into the local economy. Despite supply chain shortages, UConn is now trying to get back to its pre-pandemic operations where they were able to source an exponentially greater amount of their food locally compared to other New England schools. As they also faced significant labor constraints, it is hoped that as more individuals look to rejoin the workforce, operational constraints can lessen and UConn can continue to grow as the top consumer of local produce in CT.



# New England AASHE Report Scores

## Focused on Sustainability and Procurement

Scores	UConn	UMass Amherst	UNH	UMaine	UVM	URI
Rating	Platinum	Gold March 6, 2023	Platinum	Silver (Expired)	Gold	N/A
Valid Through	March 6, 2023	March 6, 2023	October 21, 2024	February 28, 2022 (expired)	March 2, 2023	
Report Version	2.1	2.2	2.2	2.1	2.2	
Report Submission Date	March 6, 2020	March 6, 2020	August 16, 2021	March 1, 2019	March 2, 2020	
Overall Score (out of 100)	86.01	76.93	86.09	54.8	74.8	
Food & Dining	5.65 / 8.00	4.19 / 8.00	3.42 / 8.00	N/A	4.51 / 8.00	
Food and Beverage Purchasing	3.65 / 6.00	2.19 / 6.00	1.42 / 6.00	Not Pursuing	2.51 / 6.00	
Sustainable Dining	2.00 / 2.00	2.00 / 2.00	2.00 / 2.00	2.00 / 2.00	2.00 / 2.00	
Sustainable Procurement	3.00 / 3.00	2.25 / 3.00	3.00 / 3.00	1.25 / 3.00	1.50 / 3.00	
Sustainable Dining Certification	0.50 / 0.50	N/A	0.50 / 0.50	N/A	0.50 / 0.50	
Total annual food/beverage expenditures (sustainably or ethically produced)	49.33%	16.27%	8.36%	N/A	25.72%	

# UConn Dining Halls

Dining staff make data-driven food planning decisions and work hard to meet the needs of students.

All of UConn's dining halls contain certain consistent features. For breakfast each morning there is an omelet station at the grill, as well as cereal, fresh fruit, and yogurt. As a general policy, the dining halls have begun leaving breakfast out later, until lunchtime, in order to reduce food waste by providing students additional opportunities to consume the breakfast food items. The dining halls also always supply staple items such as white rice, burgers, hot dogs, and pizza. Salad bars are available for lunch and dinner in every dining hall with additions using leftover food items from previous meals. Per UConn policy, all of the dining halls are nut-free and use alternatives instead. Each dining hall also features a gluten-free fridge open to all students regardless of allergies. For students with food allergies, managers work closely with those students, providing alternatives for the main meal or making another meal that the student requests.

As a part of this study, we were fortunate to interview Managers and Assistant Managers of each of the UConn Dining Halls. Managers in the dining halls were gracious to tour us and detail the process from ordering to serving. Managers often described the various strategies they undertook to improve the dining experience for students. For instance, one dining hall began offering mini marshmallows next to the hot chocolate after the manager noticed that every day someone was taking a bowl of Lucky Charms but only consuming the marshmallows. Another described calling around to all their distributors and other dining halls in search of a type of cereal a student wanted. All of the UConn Dining staff members we came across showed pride in their work with both food and student engagement. Staff members such as Luis Diaz, known as Soop Doop, have become infamous amongst the student body just for saying "have a super duper day" to students. Student engagement with dining halls is a vital part of this study to further our goal of providing the best recommendations to connect students with farmers.

**All eight of UConn's dining halls have received Green Restaurant Certification. This makes UConn the first public university to have Green Restaurant Certification for 100% of its dining halls. Green Restaurant Certification takes into consideration water efficiency, waste reduction and recycling, sustainable furnishings and building materials, sustainable food, energy, disposables, and chemical and pollution reduction.**



# UConn Dining Halls

## Buckley

***On March 9, 2022 we spoke to Area Manager Chris and Assistant Manager Andy***

Located near Buckley and Shippee residential areas, the Buckley dining hall is the only UConn Dining Hall open solely Monday through Friday. As a smaller dining hall, the lunchtime number of students ranges from 200-300 each day. During the COVID-19 pandemic for the school year of 2020-2021, the Buckley dining hall was used for quarantined students, leading to students who had never thought of going to Buckley before remarking on how much they enjoyed going during their quarantine.

Fun Fact: Buckley dining hall is now home to the farmhouse-style tables and chairs of the old Whitney dining hall! This furniture was made by inmates through a contract with CT prisons.

## McMahon

***On March 30, 2022 we spoke to Manager Debbie***

Among students, McMahon dining hall is known for its international influences. Situated in McMahon residence hall, where many international students reside, and across from West Campus, McMahon sees 2,000-3,000 students a day. Plated meals are unique to McMahon, with different style plates depending on the dish. Stations in McMahon usually serve options of an Asian-inspired dish, Italian-inspired dish, standard grill items, American-inspired dishes, and pizza. Pizza is the specialty item in McMahon, with a pizza station located in the middle of the dining hall to allow students to see the pizza made fresh using a gas-fired stone oven. McMahon is also one of the two dining halls with late-night dining until 10 pm, with each menu having a different theme than the regular dinner menu.

## North

***On March 2, 2022 we spoke to Manager Joe***

In the middle of North Quad, formerly known as “the Jungle”, lives North Dining Hall. Busby Suites students and Northwest Quad students also have easy access to North Dining Hall. On average, 3,849 students go to North for dinner in a given week. North is known for its Action Bars where students can customize their own meals according to the dish being served.

Examples of lunchtime Action Bars include the infamous BLT bar, grilled cheese, homemade cream cheese, and grain bowl. The grain bowl bar cycles through three different types of grain bowls on a three-week schedule. Dinner action bars include stir fry, pasta, ice cream, and crepes. Amongst students, it is known that you should arrive early on nights like Wednesdays where there is always both pasta and the ice cream sundae bar.

North is also the last dining hall with a physical comment board. Comment cards are available for students to write any questions, comments, or concerns they may want to be answered by management. Managers at North take great pride in responding to the comment cards and taking comments into consideration with chefs and other Dining Services staff.

## Northwest

### ***On March 2, 2022 we spoke to Manager Steve***

Next to North Dining Hall is Northwest Dining Hall in the middle of the Northwest Quad which also allows access to the North and Busby students. Northwest is the third busiest dining hall with an average of approximately 1,600 for dinner count. Northwest also offers late-night dining with different menu options. The traditional dinner menu often consists of themes such as “Australian Night”, and occasional holiday-themed meals where the staff can decorate according to the theme. Northwest Chefs employ batch cooking for meals, though not all at once.

## Putnam

### ***On February 23, 2022 we spoke to Manager Eric***

For students living in Werth and Garrigus residential areas Putnam Dining Hall provides a unique experience of two-story dining. Putnam dining hall serves the same meals upstairs and downstairs with the exception of action bars. The downstairs dining room has a section dedicated to international cuisine and a grain bar for lunch and dinner. The upstairs dining room has the infamous smoothie bar which many students go to Putnam solely for. Putnam features a “green wall” growing herbs under light to be used in cooking.

## South

### ***On March 9, 2022 we spoke to Manager Cheryl***

South Dining Hall is the largest and busiest dining hall on campus. Located near South and Alumni residential areas, South sees approximately 2,000 students a day. South’s food items include culturally relevant comfort food and easy meals reminiscent of what students would get at home, such as Chicken Tikka Masala or Shrimp and Grits. For a short period of time South even offered cereal in boxes for students to remind them of home. To break up the monotony of each day Chefs will prepare meals according to themes of upcoming holidays or do special events such as chili cook-offs to interact with students. With a large garage housing a fridge underneath the dining hall, other dining halls share the space to store their extra food if they don’t have room in their own facilities.



# Towers / Gelfenbien Dining Commons

**On April 13, 2022 we spoke to Manager Jim**

Gelfenbien Commons, known amongst students as Towers Dining Hall, is located in the Towers residential area and near Husky Village. Towers Dining Hall is the only dining hall that features NOSH, a kosher kitchen, with certification from the Kashrut Commission of Greater Hartford and close supervision from resident Mashgiachs. The NOSH kosher kitchen has separate meat and dairy sides. All chicken and beef are Halal source. Kosher options are available to all students for no additional cost. For High Holidays a space is provided to those students who choose to dine in private. Additionally, Towers features Halal (Muslim) menu options.

Towers dining hall usually sees approximately 400 students for both breakfast and lunch. For dinner anywhere from 700-800 students go to Towers. Action items such as pasta, stir fry, mac and cheese, and quesadilla bars are popular options for students. Pizza in Towers is made using the same type of gas-powered stone oven as the one in McMahon with dough made from the UConn Bakery. Towers is the only dining hall with outdoor patio seating.

# Whitney

**On February 23, 2022 we spoke to Manager Ron**

Whitney Dining Hall is known as the "local" dining hall amongst students. Located on the East side of campus near the College of Agriculture, Health, and Natural Resources (CAHNR), Whitney more frequently uses products from Spring Valley Student Farm. Recipes for Whitney Dining Hall are the hardest to write because of the seasonality of local products. Prior to the COVID-19 pandemic, Whitney was the only dining hall to serve UConn eggs and Dairy Bar Ice Cream. After undergoing an interior renovation in 2019 Whitney Dining Hall is also the only dining hall to be LEED certified.

## Sample Menu from Whitney Dining Hall

-- BREAKFAST ENTREES --
Bacon
Buttermilk Pancakes Allergens: Milk, Eggs, Wheat
Cage Free Boiled Eggs Allergens: Eggs
Mini Potato Pancakes Allergens: Soybeans, Gluten
Omelet Bar
Plant Based Pancakes Allergens: Wheat, Soybeans
Scrambled Eggs Allergens: Eggs
Scrambled Eggs with American Cheese Allergens: Milk, Eggs, Soybeans
-- OPTIONS --
Oatmeal Hot Cereal Allergens: Gluten
-- DESSERTS --
Pumpkin Bread Allergens: Milk, Eggs, Wheat, Soybeans, The UConn bakery uses coconut (a tree nut). Menu choices are subject to availability.

-- SMART CHECK ENTREES --
Cheese Tortellini w/ Red Pesto & Cannellini Allergens: Milk, Eggs, Wheat
-- ENTREES --
Beef & Andouille Burgers with Asiago Cheese Allergens: Milk
Buffalo Mac n' Chicken Allergens: Milk, Wheat, Soybeans
NOT SO CRABBY Crab Cakes Allergens: Wheat, Soybeans
Stir Fry Bar
-- SOUPS --
Potato & Leek Soup Allergens: Milk, Wheat
-- SIDES --
BBQ Carrots
Wedge Fries w/ Skin Allergens: Wheat, Soybeans, Gluten
-- DESSERTS --
Death by Chocolate Pudding Allergens: Milk, Eggs, Wheat, Soybeans, The UConn bakery uses coconut (a tree nut).
Oatmeal Raisin Cookies Allergens: Wheat, Soybeans, The UConn bakery uses coconut (a tree nut).

-- SMART CHECK ENTREES --
Creole Tofu Allergens: Soybeans
-- ENTREES --
Beef Stroganoff Allergens: Milk, Soybeans
Honey Lime Basted Pork Loin
-- SIDES --
Buttered Egg Noodles Allergens: Milk, Eggs, Wheat
Old Bay Roasted Sweet Potatoes
Sauteed Spinach With Garlic
-- DESSERTS --
New York Style Cheesecake Allergens: Milk, Eggs, Wheat, Soybeans, The UConn bakery uses coconut (a tree nut). Menu choices are subject to availability.

# Food Waste

## Dining Services actively works to reduce food waste, including reusing food and sendings scraps to bio waste facilities

In an effort to confront food waste being produced within Dining Services, UConn piloted a partnership with Quantum Biopower in 2018. Quantum was founded by UConn Alumni Brian Paganini and uses a process called anaerobic digestion to break down food waste. Methane gas is released as a product of food decomposition which is then captured and used as a biofuel to power local municipal buildings in Southington, CT.

Similarly, in order to monitor the amount of food waste being produced, UConn partners with Leanpath to track pre-consumer and post-consumer waste. Leanpath allows Dining Services to weigh the amount of food being thrown out, and catalog the reasons why. Thus, UConn is not only able to efficiently track the food waste being produced but also identify areas of waste to create solutions to decrease the amount of food waste. By sharing information about Leanpath to students on stickers posted on food serving stations, Leanpath helps students understand where food waste is coming from and think about the food while taking meals. On top of this, Leanpath is a nonpunitive way for staff to monitor the food being wasted in the pre-consumer stage, and determine how to best adjust to continue creating less waste. Additionally, it's clear UConn Dining Services has made sustainability a priority by focusing on ways to mediate food waste. By analyzing traffic into dining halls along with tracking how much of certain items are consumed, UConn can better mandate how much food they are producing to lessen waste. In other words, UConn allows its chefs to adapt and develop recipes around reducing waste where recipes and dishes are developed according to what is available to use. For instance, Dining Services will frequently reuse menu items to reduce waste, so these items appear in new dishes. For example, one may see unused proteins from dinner used in the salad bar or omelet bar the next day. UConn has implemented a variety of changes throughout the years to become more environmentally conscious. Dining Halls originally started as a traditional buffet serving style with trays, but began incorporating single-use plates into all dining halls to mitigate the urge for students to overload their trays. On top of this, each dining hall puts together food palettes at the end of the year where open dining units can select food products to use in their summer operations. Any additional food that isn't used by Dining Services is donated to Covenant Soup Kitchen.

**UConn's steps to reduce waste can be highlighted in their Juice Bar, which has been a signature of Putnam Dining Hall. The Juice Bar was a popular attraction that allowed students to build their own smoothies from a selection of fruits and juices. However, in reality, it was a financial and environmental burden for Dining Services. Putnam found that students were overfilling their cups, and employees were forced to dump out 50% of the smoothie. As a result, Dining Services responded by offering two kinds of pre-made smoothies every day, rather than maintaining an open bar for students to build a custom smoothie. Thus, Dining Services was able to cut their spending on fruit drastically. Having a build-your-own smoothie bar forced Dining Services to buy around 25 cases of strawberries 3 times a week, with at least 50% being wasted. However, with the new style of the juice bar, Dining Services is able to purchase only 5-6 cases a week, drastically reducing both cost and food waste.**

# Impacts of COVID-19

COVID-19-based staff and supply shortages have increased the workload of employees as they try to maintain prior service levels.

Staffing dictates much of what the dining halls are able to accomplish because with larger staff numbers there is more flexibility to incorporate different menu options. Due to the COVID-19 pandemic, dining halls had to change their operations, and most have not yet been able to regain pre-COVID staffing numbers. This is especially stark in the student workers that make up a large portion of the workforce for dining halls. **For instance, for South Dining Hall to be fully staffed 120 students are needed while as of the Spring 2022 semester only 50 students were working.** Dining halls rely on students to assist with cooking, prep, and dishwashing. With not enough students, many dining halls have had to use paper products which also means much of the uneaten food is also thrown away rather than put into food waste.

Action Bars were largely affected by short staffing due to the COVID-19 pandemic. Rather than cooking students customized meals individually, the Kitchen Assistants and Chefs have been batch cooking. To make up for the lack of Action Bars the dining halls would batch cook ingredients and put them out for students to customize plates. Dining halls that have late-night menu options had to cut down from doing a different menu to just using the same menu as their dinner menu. Other dining halls had to shut down running late-night dining altogether. Themed menus have been increasingly difficult to do with short staff and lack of ability to procure food. Prior to COVID-19 dining halls would do theme nights for holidays, random occasions, and seasonal events. With a lack of staff, it is harder to decorate and cook food accordingly. Managers expressed their disappointment at not being able to offer these activities that are so beloved by the student population.

Increased prices and difficulty ordering due to supply chain issues have also affected menu options. Menu items such as strawberries that Dining Halls used to be able to get out of season are now only available to students during the season due to availability. Items ordered can also be substituted out last minute due to increased price and unavailability. Chicken wings are an extremely popular menu item that was difficult to get during the school year of 2021-2022, and often substituted out when ordered. Menus are planned out three weeks in advance with orders taking place Monday through Friday, so if an item unexpectedly becomes unavailable dining halls often borrow from others or substitute, which can cause unexpected problems. For instance, allergen information is displayed for all food products but a necessary shift from margarine to butter experienced by a dining hall one meal required a handwritten update as the Naan was no longer safe for those with dairy allergies.



# Internal UConn Dining Suppliers



Spring Valley Student Farm (SVSF) is located just 4.5 miles off the Storrs main campus and is owned and operated by UConn Dining Services. Spring Valley is managed by a specially hired Farm Manager, Jess Larkin-Wells, who oversees the farm and its students. Jess works with dining services to plant crops according to the dining hall's needs for products in the upcoming semesters. Per the farm's mission, student farmers work with Jess to "learn about sustainable community living, organic food growing methods, and the business aspects of how food is harvested, processed, and presented to the UConn dining community" (UConn Dining, 2018). Options for students interested in working on the farm include housing in the farmhouses, a club, internships, and independent studies. The farm hosts "Farm Fridays" to provide volunteer opportunities for individuals or student organizations, and provide transportation to the farm. Any student, regardless of major or background, is allowed to participate in some way at SVSF. SVSF prioritizes biodiversity and respectful stewardship of the land. The land serves as an educational tool for students to embrace innovative thinking in various forms of projects. SVSF prides itself on having solar energy, aquaponics, and an edible forest.

The public is welcome to participate in workshops, volunteering, or tours. SVSF is open for tours by request and regularly on Tuesdays during the summer and Fridays during the warmer parts of the fall and spring semesters. The "Farm Fresh Market" by SVSF is open every Thursday 11:30 am-1:30 pm June through September on the patio of the Benton Museum and Beanery Cafe on-campus. Student Farmers operate the market and are present to answer any questions about SVSF or their produce. During the early Fall semester and late Spring semester SVSF also provides transportation for "Farm Fridays" to allow students to volunteer and learn about the farm. **For more information or to become involved one can contact Jessica Larkin-Wells, Farm Manager, at [jessica.larkin-wells@uconn.edu](mailto:jessica.larkin-wells@uconn.edu).**



# Internal UConn Dining Suppliers



The Animal Science Department at UConn is home to six species of animals (horses, sheep, beef cattle, dairy cattle, chickens, and pigs) that live on Horsebarn Hill year round. The Kellogg Dairy Center houses the nationally recognized herd of Holstein and Jersey cattle which are milked out daily by two robotic milking systems. In the warmer months, the cows graze on Horsebarn Hill, providing entertainment for visitors walking past while on the trails. Milk from the cows goes to the UConn Creamery to be produced into the famous UConn ice cream and cheese sold in the Dairy Bar, and Dairy Bar ice cream truck, both owned and operated by Dining Services.



The poultry farm at UConn houses hundreds of White Leghorn chickens. The chickens produce both fertile and non-fertile eggs that are available for sale. Whitney Dining Hall prior to COVID-19 purchased non-fertile eggs from the poultry farm to be used in the dining hall. Extra eggs are made available and sold to the public in the Dairy Bar.



# Internal UConn Dining Suppliers

## Department of Animal Science



Other production animals at UConn include sheep, beef cattle, and pigs. Young pigs are currently only on the UConn campus during the Fall for students to interact with before being sold to new homes. As for beef cattle, UConn is home to a breeding herd of Hereford and Angus cattle which produces calves for students to work with. The beef herd grazes the land on Horsebarn Hill and Spring Valley Student Farm in the summer and fall. UConn is also home to breeding herds of Southdown, Dorset, and Shropshire sheep which are available for students to work with. The sheep also produce wool for blankets which are sold by the Animal Science Department. UConn also has a Morgan horse breeding program and a riding program with various equestrian teams for students to get involved with. With all of the animals at UConn, there is the opportunity for work, research, and hands-on classes for students, regardless of major, to participate.



# External UConn Dining Suppliers



Red's Best was founded in 2008 by Jared Auerbach, who had worked on commercial vessels in Alaska and Massachusetts. Red's Best operates from its headquarters in Boston, MA where they have roughly 100 employees and have directly worked with over 2,000 fishermen. Auerbach saw an opportunity when creating Red's Best to implement data management software that would allow Red's Best to support community-based fishing by managing the small inbound data points to track daily catch when fishermen offload vessels to Red's Best. Its mission is to supply New England institutions with diverse species of local fish while supporting small-scale fishermen. In addition to UConn, Red's Best also supplies universities, colleges, and schools throughout the region, including Cornell, Harvard, Cambridge, and Boston Public Schools. Jamey Lionette, Sustainable Seafood Program Developer at Red's Best, noted that they support diverse New England communities and have implemented sustainable practices across their entire operation. Red's Best has been able to bring fresh fish to underrepresented communities through school lunch programs, educating them at a young age about fishing.

Importantly, due to the supply model approach to purchasing (as described below), they are able to offer affordable prices to schools that are still profitable for their company. Additionally, the company has applied for grants to provide fishermen funding to not fish for a day, and instead do demonstrations at schools. Their hope is to change the way consumers understand fishing, and prove that seafood can be environmentally, socially, and economically sustainable.



# External UConn Dining Suppliers

## Red's Best

Notably, fishing is a unique industry as supply is nearly impossible to determine. Traditionally, supply dictated consumer demand, and consumption was based on the fish available on a given day. Returning to this model can reduce overfishing and allow demand to better match seasonal fish patterns, but it requires changes in consumer behavior. For example, having well-trained chefs that are able to cook a variety of fish can showcase the flavor of underutilized local species such as monkfish or butterfish. Additionally, as comparable types of fish can taste similarly (e.g. white fish such as scrod, haddock, or cod), the company believes in educating chefs to create recipes that work with whatever fish is in abundance on a given day.

The overarching goal is to reinforce regulations that prevent overfishing. By promoting a model that sustains a fishing fleet to harvest well-managed fisheries, Red's Best is also able to guarantee a livable wage for all fishermen. Red's Best has also designed and implemented a QR Code system that tracks the boat, species, and date of each shipment. Not only does this provide buyers with total traceability, but it also allows chefs and schools to publicize the local fishermen that caught that day's seafood that is being served.



# External UConn Dining Suppliers



Founded in 1937, Omar Coffee is a Connecticut-based roaster and distributor of coffee and coffee products. As a family business in its fourth generation of ownership, Omar Coffee focuses on delivering fresh premium coffee with personalized service to its customers. Omar coffee uses Arabica beans which are known to be grown at higher altitudes and picked by hand. While they roast all their own beans, they also sell green coffee beans, which can be made into coffee upon request. Omar Coffee has its own lines of kosher-certified, fair trade, and organic coffee, all of which come in a variety of flavors. Organic coffee is kept in separate vats and pipes to prevent cross-contamination. Fair Trade and Organic farms are traditionally smaller and must be tracked with lot numbers to prove certification. All of the coffee is traceable when grown, picked, and roasted with lot numbers.



As a distributor, they sell to institutions and diners and direct to consumers through their online store. Omar also produces coffee for third-party companies, such as Kraft, which then distributes their coffee to the United States military. Omar Coffee has 45 staff members working in all aspects of the business. Omar Coffee continues to grow and stick to its original mission of providing fresh coffee for its customers to rely on. In 2020 they added solar panels to power their facility in addition to their fleet of electric company vehicles to make the company more sustainable.



# External UConn Dining Suppliers

## Omar Coffee

Omar Coffee has had a partnership with UConn since the 1990s. For a time they were producing coffee in a can for UConn athletics. Currently, they provide all of the coffee for dining halls, cafes, and catering. In addition to the coffee, Omar provides all of the machinery such as the dispenser as well as the servicing for the machinery. For higher quality coffee, such as the coffee served at UConn, the roasters “cup” the coffee to taste and test it before shipping it out. All of the coffee served at UConn is fair trade and kosher certified. Within the UConn Dining Halls, Omar Coffee provides signage such as posters and labels for all the dispensers detailing the origins of the coffee.



# External UConn Dining Suppliers



Sardilli's is the primary produce distributor utilized by UConn. A family-run operation, the owners' grandfather first opened a stand in Southington, CT in 1955 selling fruits, flowers, and Christmas trees. In 1975 the next generation started to sell wholesale produce out of the fruit stand, which continued until 1980 when the fruit stand closed and Sardilli Fruit and Produce moved to Hartford. In 2006 Sardilli's opened a precut facility to slice and dice veggies, offering value-added produce processing. While they had to reduce operations during decreased demand due to COVID, before the start of the pandemic they had 140 employees. Their delivery radius covers all of CT, Westchester County NY, Worcester County, the Berkshires in Massachusetts, and Keene NH.



Devin Sardilli and his brother are now the third generation to run the company and work hard to support local producers. Given the costs of Good Agricultural Practices (GAP) certification, Sardilli's offers producers the option to be certified through their company instead. Sardilli's works with 35-45 farmers in the Northeast region and will often purchase from multiple farmers to fill orders. They are able to work with farms as small as five acres, though those producers would generally need to be specializing in one or two products, as well as larger diversified farms. Currently during the summer months Sardilli's purchases from upstate NY, NJ, MA, and CT. Farmer profiles for all of the farmers Sardilli's purchases from are available on their website.



# External UConn Dining Suppliers



Eric Henry is the fifth generation President, Owner, and Operator of Blue Hills Orchard in Wallingford, CT. Eric is also the third generation to sell to Sardilli's Produce and Dairy. Since its inception wholesaling has been Blue Hills Orchard's main priority, but a retail stand and Pick-Your-Own orchard are now open to the public. Their 300-acre farm produces 150,000 bushels a year of apples and stone fruits such as peaches, nectarines, and plums. Sardilli's primarily buys apples, and some peaches. Blue Hills has come to understand what Sardilli's needs each week and sets fruit aside accordingly. Blue Hills Orchard is globally GAP certified, and Eco-Certified in the fruit program through Red Tomato.

They are proud to serve universities and K-12 schools in the area and note that they have found going through Sardilli's to be the most effective way for them to get their products in schools.



# Producers Not Selling to UConn



## Cloverleigh Farm

Cloverleigh Farm, located in Columbia, CT is owned and operated by Susan Mitchell. Susan started her farm in Mansfield before moving to Columbia in 2020, where she now farms on five acres of land with 25 different crops. While in Mansfield she developed a working relationship with Whitney Dining Hall, which bought her produce directly.

When first selling to UConn the process was easy and she directly worked with managers at Whitney Dining Hall. However, when UConn changed its policies for vendors, which increased the necessary paperwork, Cloverleigh Farm stopped selling to the university. Cloverleigh Farm still partners with UConn classes, organizations, and UConn Extension agents. Due to the prices of her high-quality vegetables, Susan doesn't foresee herself selling to wholesale distributors in the future.



# Student Survey: Student Demographics

Summary Statistics		
Housing	Number	Percent
On-Campus	191	72.62%
Commuter	72	27.38%
Year	Number	Percent
Freshman	53	20.15%
Sophomore	78	29.66%
Junior	74	28.14%
Senior	52	19.77%
Graduate	6	2.28%
School	Number	Percent
CAHNR	79	30.04%
School of Business	30	11.41%
School of Engineering	36	13.69%
School of Fine Arts	12	4.56%
Neag School of Education	11	4.18%
CLAS	101	38.40%
School of Nursing	6	2.28%
School of Pharmacy	6	2.28%
School of Social Work	1	0.38%

294 students began the survey, resulting in 263 completed responses. UConn Storrs on-campus residents dominated survey responses, as they comprised 72.62% of respondents. This is higher than the overall percentage of on-campus Storrs students of 65% (UConn, 2020a). We hypothesize this is likely due to the fact the survey was promoted on-campus at UConn Spring Fling, and through posted signage within various buildings on the Storrs campus.

However, of the 72 respondents who were commuters, 63.89% had previously lived on campus. Our highest number of respondents came from CLAS, though they are still underrepresented in our survey as they make up 49% of all students. In comparison, CAHNR students make up just 10% of the campus population but 30% of our survey respondents (UConn, 2021). This is most likely due to the undergraduate researchers being in CAHNR, as well as the bulk of advertising occurring on the side of campus that includes this college. In terms of academic standing, sophomores and juniors are overrepresented in our survey (17% and 22% of the population respectively), while graduate students, which make up 18% of the student population, are underrepresented. This is unsurprising as the survey was targeted to students at undergraduate events. Additionally, graduate students are not our target population as many have most likely never eaten at a campus dining hall.

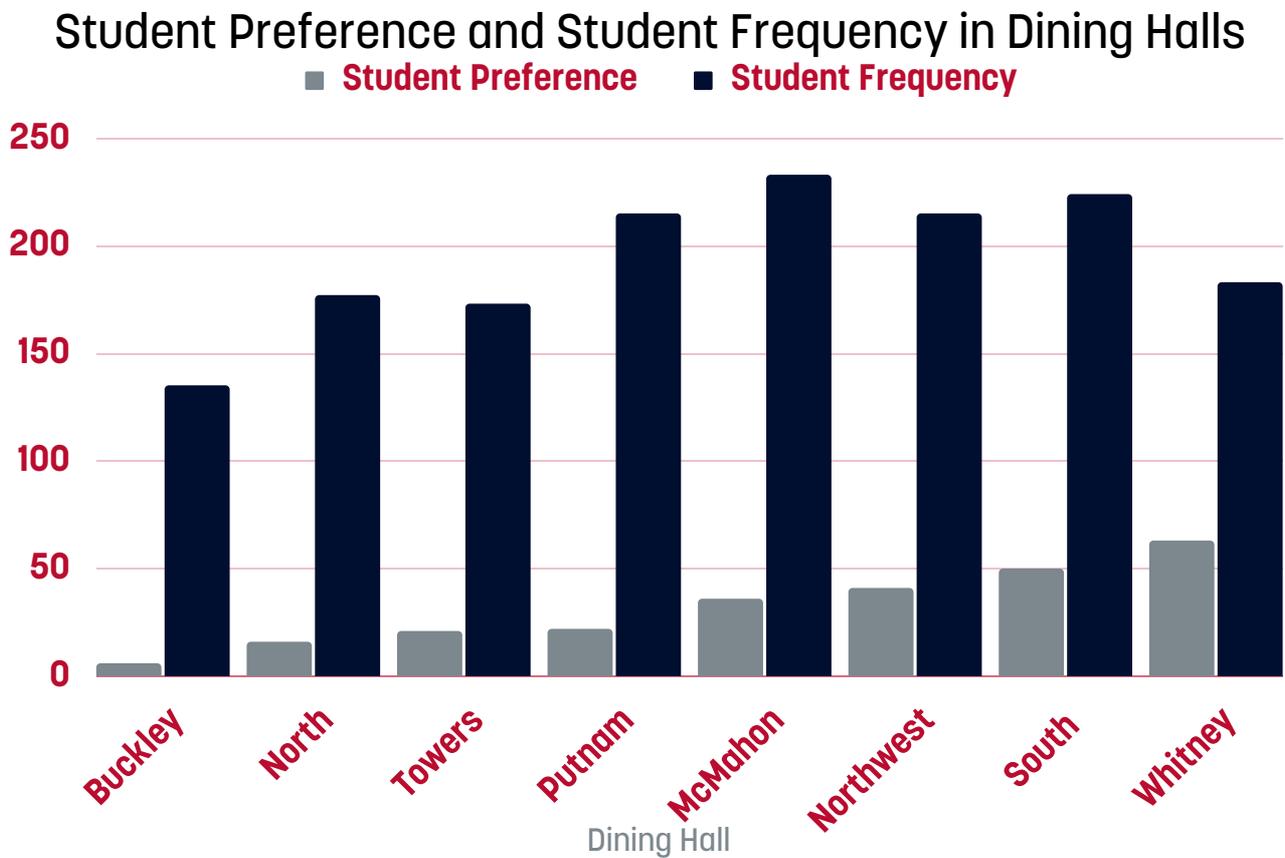
# Student Survey: Dining Halls

The majority of UConn students have or had a meal plan and frequently visit Dining Halls, but have negative attitudes towards UDS.

Dining Statistics		
Dining Hall Attendance	Number	Percent
7+ Times	23	8.75%
4-6 Times	9	3.42%
1-3 Times	16	6.08%
Never	24	9.13%
Employed by Dining Services	Number	Percent
Yes	226	85.93%
No	37	14.07%
Have Meal Plan	Number	Percent
Yes	188	71.48%
No	75	28.52%
Have/Had Meal Plan	Number	Percent
Yes	244	92.78%
No	19	7.22%
Type of Meal Plan	Number	Percent
Ultimate Plan	36	13.69%
Value Plan	119	45.25%
Custom Plan	79	30.04%
Community Plan	13	4.94%
Satisfaction with Dining Halls	Number	Percent
Satisfied(1-2)	44	16.73%
General (3)	58	22.05%
Not Satisfied(4-5)	136	51.71%

# Student Survey: Dining Halls

Whitney is the most preferred dining hall, while Northwest is the most frequented.



Students were asked about their experiences and attitudes towards UConn Dining Services.

A majority of respondents (71.48%) had meal plans for the 2021-2022 school year, and 74.67% of respondents who did not have a current meal plan previously had one. For both students with previous or current meal plans, the most popular plan among respondents was the middle-priced option, the Value Plan, with the cheapest option, the Custom Plan, coming second, and the most expensive plan, the Ultimate Plan, being the least popular. The most frequented dining hall according to survey respondents was McMahon Dining Hall with Buckley Dining Hall being the least frequented. Moreover, Buckley Dining Hall ranked as the least preferred of all UConn dining halls. Conversely, Whitney Dining Hall ranked amongst the most liked dining halls, with South and Northwest rated second and third. Whitney is known to students as the dining hall that serves local foods and especially provides items sourced from Spring Valley Student Farm. As a result, this demonstrates a positive relationship between dining halls that students are aware are providing more locally sourced foods and students' opinions towards dining halls.

Students were also asked about their experience with UConn dining halls. A slight majority of respondents expressed dissatisfaction with dining halls (51.7%). This is unsurprising as student ratings of dining services are consistently low, and expectations have increased (Kwun et al., 2013; Wooten et al, 2018). Additionally, the attributes most valued by students of ambiance, variety, service and food quality (Smith et al., 2020) have all been negatively impacted by the pandemic.

# Student Survey: Local Food

Only about half of the students indicated that they had knowledge of UConn's local food procurement, but students still have a desire for more local food in dining halls.

Local Statistics		
Local Food Awareness	Number	Percent
Yes	131	49.81%
No	132	50.19%
Ideal Percent of Local	Number	Percent
0-10	8	3.04%
10-20	12	4.56%
20-30	48	18.25%
30-40	64	24.33%
40-50	50	19.01%
50+	79	30.04%
Quantum Awareness	Number	Percent
Yes	44	16.73%
No	219	83.27%

# Student Survey: Local Food

## UConn Students Definition of "Local Food"

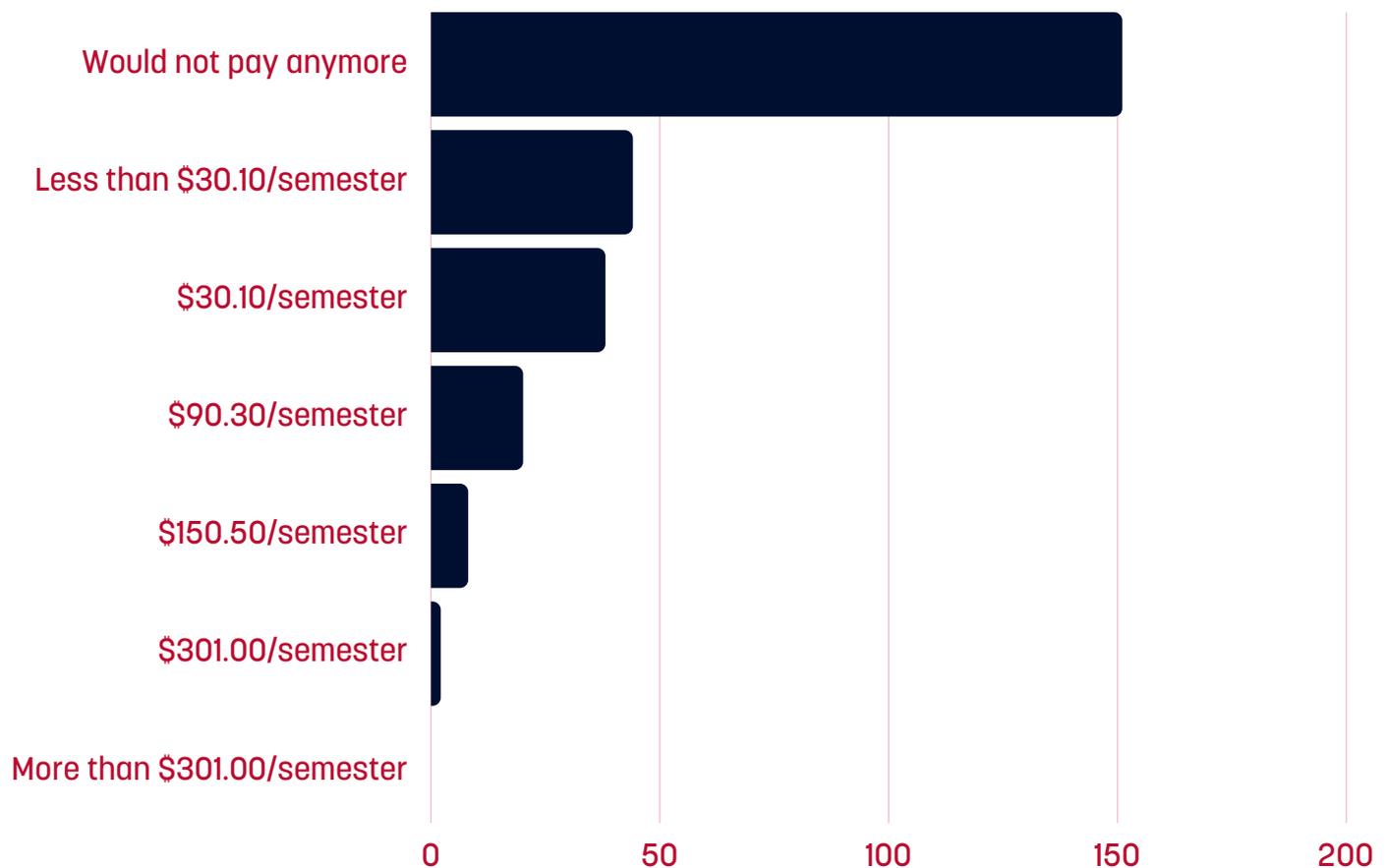


Survey responses were evenly divided between students being aware or unaware that Dining Services procured local food. 48.31% of students who stated they were aware of local food being served in dining halls cited knowing the information from posters in dining halls, compared to 27.53% from information provided on signage about the food being served. Moreover, 83.27% of students were unaware that UConn worked with Quantum to reduce food waste coming from dining halls. The mode response of students was to define local to UConn as within 20 miles of the university. Moreover, students stated they also defined locally as within CT and within 50 miles. On the other hand, only 2.35% of students define local the same as Dining Services does, being within 250 miles. This indicates that students are likely not aware of how UConn and other institutions define local food and the process in which food is sourced across New England schools. Students indicate a strong desire for local food in dining halls. Responses showed that 30.04% of students would ideally have over 50% of the food in dining halls be locally sourced. A majority of respondents (50.18%) felt an ideal percentage was 40% or less, which is in line with usual Dining Services levels.

# Student Survey: Willingness to Pay for Local Food

UConn students are unwilling to pay for increases in local food served in dining halls.

WTP for Local Food in Dining Halls



However, students generally had no interest in paying additional funds to ensure local food in dining halls, as 57.41% of respondents stated they would not be willing to pay any more for a meal plan even if at least 20% of the food being served was locally sourced.

However, there is an approximate WTP of \$45.16 for the 112 students with a positive valuation (and an overall WTP value of \$19.23). Researchers also found that student's willingness to pay more for local foods was related to if students did or did not currently have a meal plan. Specifically, 62% of those with a meal plan were unwilling to pay a premium, compared to 46% of those currently without a meal plan. Researchers also found that there was no indication that food insecurity affected students' willingness to pay more for local foods. Willingness to pay more for local food was also unrelated to whether students were enrolled in CAHNR, the college most likely to have students interested in agriculture and food production.

# Student Survey: Marketing

The majority of UConn students see and read signage posted about food, and over three-fourths of UConn students want to learn more about UDS's sustainable practices.

Marketing Statistics		
Awareness of SVSF	Number	Percent
Yes	151	57.41%
No	112	42.59%
Seen Labels for SVSF	Number	Percent
Yes	61	23.19%
No	202	76.81%
Seen Local Signage	Number	Percent
SVSF	78	29.66%
Omar Coffee	75	28.52%
Mountain Dairy	108	41.06%
Other	23	8.75%
Inclination to Buy Local	Number	Percent
Yes	104	39.54%
Unsure	113	42.97%
No	46	17.49%
Read Information Cards	Number	Percent
Yes	176	66.92%
No	86	32.70%
Desire for more Sustainability Information	Number	Percent
Yes	205	77.95%
No	58	22.05%

While only 49.81% of students knew that UConn dining served local food, 57% were aware of Spring Valley Student Farm (though not necessarily that it was a Dining Services supplier).

General student awareness of local food signage is limited, though nearly 50% have seen signs for Mountain Dairy, which tends to be posted at every milk dispenser in dining halls. Nearly 70% of students read the information cards posted above each food item, and there is a clear interest in being provided information related to sustainability. Similar to our WTP findings concerning dining meal prices, only 40% of students would be more likely to buy food items at on-campus cafes or markets if they were labeled as local.

# Student Survey: Food Insecurity

A quarter of students reported being food insecure, and most are unaware of university practices to mitigate food insecurity.

Food Insecurity Statistics		
Awareness of Flex Pass Donating	Number	Percent
Yes	156	59.32%
No	106	40.30%
Awareness of Flex Pass Requesting	Number	Percent
Yes	21	7.98%
No	242	92.02%

Food Insecurity Questions	Often True	Sometimes True	Never True
"Within the past 12 months, I worried whether my food would run out before I got money to buy more."	19 (7.39%)	47 (18.29%)	191 (74.32%)
"Within the past 12 months, the food I bought just didn't last and I didn't have money to get more."	10 (3.86%)	40 (15.44%)	209 (80.69%)

To assess food insecurity, participants were anonymously asked two questions about their experience with food insecurity (Hager, 2010). A respondent is generally characterized as food insecure if they say "often true" or "sometimes true" to at least one of the statements (Robbins et al., 2022). In our sample, this corresponds to 24.7% of respondents (65 students). More students responded affirmatively to worrying whether the food would run out compared to having food not last. Thus, UConn students are still reporting at least one indication of marginal food insecurity according to the USDA's definition. Moreover, when surveyed about their awareness of how UConn provides outlets to mitigate food insecurity on campus, only 7.98% of students were aware that students can request Flex Passes to obtain access to a UConn dining hall. Of food insecure students specifically, only 12% were aware of the ability to request flex passes. However, in line with prior findings (Van Woerden et al., 2019), 54% of students reporting food insecurity had a current meal plan. Nevertheless, it is possible that students who indicated being food insecure while on a meal plan are food insecure "Within the past 12 months," when on breaks from school. Potentially, food insecure students being unaware they can request flex passes could align with the hypothesis they primarily face food insecurity when off-campus.

# Conclusion

UConn Dining Services has implemented practices that address sustainability economically, environmentally, and socially. Through hard work and dedication on the part of the staff, UConn Dining normally procures approximately 36% of its product locally, and another 13% sustainably according to AASHE standards. By partnering with companies such as Omar and Red's Best, UConn supports not only those organizations' sustainable actions, but also their CT-based employees. Purchasing through a distributor such as Sardilli's, which created an internal certification process to increase the number of local farms it can buy from, increases access of smaller CT farms to intermediated marketing channels.

In addition to implementing environmental best practices such as trayless dining, UConn also tracks all food waste, repurposes unused food items, and collects all food-based refuse to be used in alternative energy production. Strategic moves such as changing its smoothie bar have reduced food waste while also saving money, which can then be spent on more intentional procurement. While leading its peer institutions on sustainable purchasing and practices, UConn's meal plan prices are right in the middle of those charged by other New England land grant universities.

**However, this value proposition is not being communicated to students.**

# Recommendations

## Marketing

### Small

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As 60% of respondents read the informational cards placed above each menu item in dining halls, we suggest printing “local” labeled stickers to add to these nutrition cards. Our other smaller marketing suggestion is to display the QR codes provided by Red’s Best on days that their fish is served. QR codes could be printed off in a smaller form to be next to the nutrition card, or bigger into a sign. Having QR codes strategically placed around dining halls and near the available seafood means students can know where and when fish was caught and the fisherman providing the seafood. Additionally, signage related to the CTGrown or HeartCTGrown programs could be displayed in dining halls.

### Medium

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We propose inviting local fishermen and farmers into the dining halls to display their products. While this would be time-consuming to coordinate, many fishermen and farmers enjoy the public outreach. In the past, Red’s Best has received grants that allow fishermen to not fish for a day, and instead do demonstrations at schools. Though fishermen from Red’s Best may not be able to travel from Boston to Storrs, UConn can apply this model to local producers and distributors. Notably, Sardilli’s suppliers who are based in CT can come to UConn, especially during their off-seasons, to do demonstrations and product sampling. If in-person visits are not possible, implementing farmer “takeovers” on the social media platform Instagram would give students an inside look at the farms selling directly to UConn while encouraging interaction between farmers and students. Utilizing campus resources, UConn Dining Services could work with the student-run newspaper The Daily Campus or UConn Today to have monthly features of producers. These pieces could highlight certain producers depending on the season.

### Larger/Higher End

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Our higher-end marketing suggestions would be to highlight farmers through more physical promotional materials in and around dining halls. Given that when surveying UConn students, 48.31% stated they learned of UConn’s local food procurement from posters, UConn can continue growing student awareness by implementing more signage within dining halls. This could include displays, posters, or table tents. Specific ingredients in a dish could be highlighted, with information on their origin placed next to the nutrition card. Lastly, videos detailing the supply chain from farm to institution with UConn personnel walking around the farms getting a tour could be utilized on social media platforms and in classes that focus on agriculture or nutrition.

# Recommendations

## Supplier Relationships

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Given the large transaction costs present in farm-to-institution channels (Gregoire and Strohbehn, 2002; Starr et al., 2003; Izumi et al., 2009; Feenstra et al., 2011; Cleveland et al., 2014; Motta and Sharma, 2016; Nelligan et al., 2016; Roy et al., 2019), UConn has primarily grown its local produce procurement through its relationship with Sardillis. This satisfies UConn's need for consistent and large quantities of products while allowing producers to sell to a variety of schools and universities through one intermediary. Additionally, given that the costs of certification such as GAP can be a barrier to farms wanting to sell to institutions (Thompson et al., 2014), Sardilli's development of an alternative certification program has increased access to many local producers. However, this system still excludes the small, diversified producers that are endemic to CT. UConn could consider partnering with a food hub to support small producers while trying to minimize logistical hurdles. While this model has been promoted by stakeholders and researchers (Izumi et al., 2010; Cleveland et al., 2014; Heiss et al., 2015; Low et al., 2015), the infrastructure remains undeveloped in Connecticut (Horning, 2018).

## Food Insecurity

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UConn and Dining Services have taken steps to address food insecurity. USG's garden boxes directly tie agriculture to combating hunger. At the end of each year what food cannot be repurposed by Dining Services is donated to a local soup kitchen. However, of most potential significance is the UConn Swipes program, which provides access to dining halls for food insecure students. Despite the potential of this program to alleviate food insecurity, only 12% of food insecure students in our sample were aware of the program, and only 17 students capitalized on this program in Fall 2019, the semester for which we have data. We recommend more actively and consistently marketing this and other programs. While the ability to donate Swipes could be advertised in dining halls, a more targeted effort may be needed to inform students about how to request them. Research should also be undertaken to understand whether the requirement that students go to the Dean's Office and complete a needs assessment serves as a barrier to student participation.

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