



Healthy Eating Initiatives in Post-Secondary Environments

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Final Report

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1.0 Overview of Healthy Eating Initiatives (HEI) in Post-Secondary Environments

This project was funded through the internal CNERG (Conestoga New and Emerging Research Grant) and aims to answer the following research question:

What are the main components of the design, organization, and operation of co-curricular healthy eating initiatives in Canadian post-secondary institutions and what is the feasibility of implementation at Conestoga College?

It is well documented that nutrition has an impact on overall health and academic success. Post-secondary students, often facing financial constraints, are a vulnerable population when it comes to eating well. In addition, nearly 90% of students at Conestoga College experience some level of food insecurity (CSI, 2023). This means a considerable number of students are struggling in some way accessing affordable, nutritious food. While there are existing healthy eating initiatives at Conestoga College, they are limited in their reach and there is interest in enhancing current initiatives.

This research project aimed to identify successful healthy eating initiatives across Canada and evaluate their suitability for implementation at Conestoga College. For the purposes of this project, healthy eating initiatives will include nutrition-related programs implemented within a post-secondary campus in Canada which are designed to increase access to food that is healthy and culturally relevant at an affordable, reduced or no cost to students. Given the supportive evidence for peer-led initiatives as far as enhancing engagement and relatability, this will be an area of focus.

The main objective of the project was to:

- Review existing programs at Canadian Post-Secondary institutions – especially those that are peer-led or potentially could be peer-led through both a published data literature review world-wide and an environmental scan within Canada.
- Perform a feasibility analysis of the structure of these programs and examine the potential to model at Conestoga by completing brief campus visits and meetings with Campus Managers.
- Summarize recommendations for consideration and share with the Food Security Collective and leadership team and student association at the college.

2.0 Summary of Published Data

A comprehensive review of healthy eating initiatives was conducted in published research. The area of supportive nutrition environments encompasses initiatives that focus on building education and skills, ensuring access to affordable and culturally appropriate food, and making healthy food more accessible. Additionally, initiatives which are peer-led offer significant benefits. The key findings from this review are summarized below.

Food Skills and Knowledge Building

Data collected showed several culinary nutrition programs aimed at enhancing cooking skills and promoting healthy eating habits among university students. For example, the Nutrition and Culinary in the Kitchen Program (2017) implemented in Brazil, the College CHEF program (2016) conducted at a US university, and a related dissertation from the University of Kentucky (2019) all demonstrate the positive impact of culinary education. These programs, despite varying in scope and methodology, collectively emphasized the importance of practical cooking sessions combined with nutritional education in fostering stronger eating habits among young adults.

There is some evidence of nutrition education programs in enhancing dietary habits and knowledge. For example, the University of New Hampshire (UNH) implemented the Guiding Stars nutrition guidance program in 2012. This program uses a simple star rating system to indicate the nutritional value of foods, with one star representing good nutritional value, two stars better, and three stars best. The program aimed to help students make healthier food choices in the dining hall and contributed to improving the nutritional quality of the university's menu and recipes (University of New Hampshire, 2012).

Furthermore, a 2025 study assessed the impact of an online nutrition education program on varsity athletes' knowledge about nutrition and dietary supplements, demonstrating significant improvements in their understanding (Daher et al., 2025).

Food Security

Food insecurity is a significant challenge for many post-secondary students in North America. Numerous studies have explored strategies to address this issue, including the establishment of food hubs that integrate multiple alternate food initiatives (AFIs) such as gardens, cooking skills, markets, and rescue programs. Research from the University of British Columbia highlighted the potential of these interventions, though more evidence is needed to determine the most effective approaches (Murphy et al., 2022). In the United States, campus-level responses to food insecurity reveal a diversity in leadership, funding, and evaluation strategies, with common programs including campus gardens and mobile food sharing apps (Fincher et al., 2018; Hagedorn-Hatfield et al., 2022).

Qualitative studies have identified barriers to accessing food assistance, such as stigma and the unavailability of specific foods, and have proposed solutions to overcome these challenges (Zein et al., 2022). Programs like SNAP-Ed, which provide nutrition education tailored to food-insecure college students, emphasize the importance of aligning educational content with student needs and suggest modifications to improve delivery (Gray et al., 2024). These insights underline the need for continued research and the development of comprehensive, student-centered solutions to ensure all students have access to adequate and nutritious food.

Peer-Led Programs

Peer-led programs are initiatives where individuals from similar age groups or educational levels provide guidance and education to their peers. These programs leverage the relatability and shared experiences of peers to effectively deliver information and support.

The FRESH program at Western University aims to enhance the campus food and nutrition environment through peer nutrition education, concluding that increased nutrition knowledge and a

supportive environment can improve student health (Matthews et al., 2014). Similarly, a study on first-year students found that peer-to-peer nutrition education, delivered by upper-level nutrition students, effectively improved dietary habits, and nutrition self-efficacy (Tallant et al., 2015). In rural Texas, two colleges addressed food insecurity by evolving a food pantry into a CARE center, utilizing social work interns as mentors to destigmatize seeking help (Shurtleff, 2024).

Additionally, the LINKS program demonstrated that peer-led cooking demonstrations were highly effective in nutrition education, suggesting easy replication at other institutions (Bradley et al., 2008). Lastly, a study on plant-based cooking demos showed that peer-led sessions were well-received and easy to understand by college community members (Andrade, 2020).

Environmental Support

The reviewed literature highlights various interventions aimed at creating healthier and more sustainable food environments on post-secondary campuses. A scoping review categorized interventions using the "Nourishing" framework, which includes labeling, affordability, availability, advertising, increasing quality, and point-of-purchase incentives (Lee et al., 2021). Systematic reviews and studies have shown that university-based interventions, such as nutrition labeling programs and changes in food visibility and pricing, can significantly improve dietary behaviors among students (Roy et al., 2015; Pohlmeier, 2012; Cárdenas, 2014). Additionally, initiatives like Healthy Beverage Initiatives (HBIs) and promotional nudges have been effective in promoting healthier beverage choices (Patel & Schmidt, 2020; Di Sebastiano, 2021).

Collaborative efforts between dietetics students and dining services have led to the development of programs like "E-Balance," which focus on enhancing the nutritional value of campus food offerings (Choi et al., 2010). Studies also indicate that replacing vending machine snacks with healthier options can yield significant nutritional benefits (Mann et al., 2019). Overall, these interventions demonstrate the potential for post-secondary institutions to foster healthier and more sustainable food environments through targeted strategies and collaborative efforts.

3.0 Summary of Environmental Scan

The research team searched for post-secondary institutions nationwide who foster supportive nutrition environments. To achieve this, an environmental scan was conducted by reviewing publicly available online information. About forty programs were reviewed and documented in a table, as detailed in Appendix A: Environmental Scan.

Overall, there are remarkable initiatives underway across Canada. A growing number of programs are addressing food security, including traditional food banks and innovative models where students select their own food and ingredients rather than receiving pre-packaged hampers. Many of these programs benefit from a robust student volunteer base that aids in implementation, and some incorporate educational components, such as usage tips and strategies to maximize food budgets.

Community gardening is prevalent in several post-secondary institutions, with some gardens supplying produce to campus food banks. Many schools also collaborate with community partners, which is a common theme among gardening projects.

Additionally, several institutions offer free meals, such as daily hot and hearty soups prepared by in-house cafeteria staff and donations from local produce markets, as well as breakfast programs that are student organized with the school supporting food costs.

There is also a trend for schools to utilize students from food-related programs such as nutrition/dietetics and culinary programs to support these initiatives.

4.0 Cafeteria Operations in Higher Education

The nutrition environment in post-secondary environments is important as it significantly impacts students' overall health and well-being. Students often face elevated levels of stress and irregular schedules, which can lead to poor eating habits. A supportive nutrition environment can help mitigate these issues by providing access to healthy, balanced meals, thus promoting better physical and mental health (Almoraie et al., 2024).

Including criteria for healthy, safe, affordable, and culturally appropriate food in the request for proposal (RFP) for cafeteria operators is one way to support the nutrition environment. Firstly, providing nutritious and safe food options is fundamental to supporting the health and academic success of students, faculty, and staff (Mawji & Grantham, 2023). Affordable food choices are necessary to address the varied financial circumstances within the campus community, thereby alleviating food insecurity and fostering inclusivity. Furthermore, offering culturally appropriate food acknowledges the diverse backgrounds and dietary needs of the institution's members, promoting a sense of belonging and cultural awareness (House et al., 2024). By emphasizing these criteria, the institution can cultivate a supportive and inclusive environment that enhances the overall campus experience.

In Canada, one of these three companies manage a sizable proportion of cafeterias – Sodexo, Aramark, and Chartwells. All these companies aim to ensure diverse and nutritious meal options while generating revenue. A brief overview of an initiative each company promotes is noted below.

Aramark

Healthy food with a low climate impact is embedded into all of Aramark's programs and overall vision. For example, the *Live It Good* campaign by Aramark aims to promote well-being and strives to make it easy to eat well (Aramark, 2024, p.24-25). This initiative encourages healthy eating, active living, and mental wellness through various programs and activities. The program includes *Eat Well* which places an icon to items that meet nutrition criteria developed by their team of Registered Dietitians. This makes it easier to identify healthy choices and dietitians are available to support programming within the post-secondary school (K. Williams personal communication, March 24, 2025).

Interestingly, Aramark partners with a local produce company and supplies hot and hearty soup daily to students at a Toronto area college. The produce company donates produce and Aramark

donates the labour to prepare the soup which reaches students on campus who self-identify as food insecure (Aramark, 2024, p. 49).

Compass – Chartwells

Chartwells higher education division aims to deliver food and experiences that nourish, foster positive student environments, ensure safety, and offer programming that meets student needs (Compass Group, n.d., para.1). For example, Chartwells worked closely with York University to launch *YU Eats* program that encompasses a variety of initiatives such as increasing plant-based menu's, a teaching kitchen and adopting the Food Guide Friendly pledge. In addition, Chartwells offers a variety of programs that campuses can pick and choose to implement such as:

- FIT+ - health menu identification program
- Dine on Campus – online menu platform
- Healthy Eating Promotions – enhance accessibility and awareness of healthy food choices
- Better-For-You Snacking – highlights healthier packaged snacks and their health benefits
- A [Healthy Canteen/Vending Program](#)

(K. Nummikoski personal communication, April 16th, 2025)

Sodexo

The *Mindful* program by Sodexo is designed to provide healthy, delicious, and satisfying food options while promoting overall wellness. This program emphasizes ingredient transparency, balanced nutrition, and portion control, making it easier for individuals to make healthier choices. *Mindful* offers a variety of recipes and meal options that are both nutritious and flavorful, created by chefs and dietitians to meet specific nutritional criteria. The program also includes educational resources and wellness tips from experts to support a holistic approach to health. By focusing on these elements, *Mindful* aims to help individuals eat better, move better, and feel better (Murphy, T, personal communication, March 12, 2025).

5.0 Healthy Vending

Various initiatives have been implemented to promote healthier snacking options through vending machines in schools, universities, and workplaces. Studies have shown significant nutritional benefits from replacing traditional vending machine snacks with healthier alternatives, despite some challenges in sales and revenue (Mann et al., 2019, para. 5). For example, replacing half of vending machine snacks with healthier options led to reductions in calories, fat, sodium, and sugar (Mann et al., 2019, para. 5). Companies have introduced healthy vending machines in schools, offering nutritious snacks like yogurt, fruits, and vegetables, which have been well-received and require frequent refills. Research has also found that increasing the proportion of healthier choices in vending machines can significantly reduce unhealthy nutrient intake without negatively impacting total sales revenue (Grivois-Shah et al., 2018). These initiatives collectively highlight the potential of vending machines to positively influence dietary behaviors and promote better health outcomes.

Several vending companies in Canada are focusing on providing healthier snack options to meet the growing demand for nutritious choices. [Adaria Vending](#) Ontario includes healthy options in all their machines and collaborates with clients on programs like SMART PICK™, promoting better-for-

you beverages and snacks. [Healthy Max Vending Solutions](#) serves the Guelph, Kitchener, and Waterloo areas with a curated mix of healthy drinks and snacks tailored for health-conscious consumers in gyms, schools, and sports facilities. [Canteen Canada](#), the largest refreshment service provider in Canada, offers healthy vending solutions across Toronto, Montreal, and Vancouver, featuring fresh food selections, hydrating beverages, and protein-rich products to support corporate wellness initiatives. [Go Nourished](#) offers over 1,000 healthy snack options nationwide, catering to the demand for nutritious on-the-go choices. [Red Seal Vending](#) offers customized vending programs with a focus on fresh, organic, and nutritious options. [Munch Vending](#) provides snacks, beverages, and fresh food options, including healthy choices, includes a focus on cashless payment systems, energy-efficient machines, and customizable product selections across Canada. These companies are contributing to the trend of healthier eating by making nutritious snacks more accessible through vending machines, enhancing the overall health and wellness of their consumers.

6.0 Summary of Interviews

As highlighted in the Environmental Scan above, there are numerous initiatives occurring nationwide. Six sites were selected for interviews to obtain further insights into the program operations. These programs were chosen due to their comprehensive nature (e.g., addressing multiple areas of supportive environments) and/or the inclusion of a peer component. Several of the sites interviewed operate programs that focus on both skill development in food purchasing and preparation, as well as enhancing food security. A brief summary of the initiatives can be found below:

The Collective Kitchen

One program, accessible to all students and running for over eight years, implements a budget-friendly cooking initiative aimed at teaching essential skills such as cooking, seasonal produce awareness, and food budgeting. Participants have access to the recipes and take home the food they prepare. The program started as a way for students to learn culinary skills, however it has since evolved to respond to growing needs around food insecurity.

Initially, the program pre-registered up to ten students per session, three times a year, utilizing kitchens in student residences but was a challenge as the demand far exceed the capacity given space limitations. However, it has since expanded by leveraging the on-campus restaurant kitchen, now reaching approximately ninety domestic and international students annually. The program is managed by the student union but receives support from the college. They employ one chef to oversee the program's delivery and have two full-time students acting as volunteers assisting.

The Flexible Food Selection Program

Another program operates a food pantry three times a week, incorporating an educational component. It employs a model where students can shop for items in the pantry and receive guidance on selecting and preparing food from peer student volunteers. These volunteers also participate in outreach, stocking, and operating the pantry.

Students can book one appointment (5 minute slot) every week and pick up to five food items to supplement their regular groceries. Food items include non-perishables, perishables, meat and plant-based proteins, eggs, dairy/dairy substitutions, bread, canned items, and fresh produce.

The program identified the registration process as a barrier for students; however, in-person support is available to assist with registration. Additionally, efforts are underway to streamline forms based on student feedback to improve the process.

The initiative is funded through ancillary fees and by the institution. and overseen by a coordinator with the student union. The program also partners with a local food bank and distributes snacks and breakfast items, while teaching students how to grow their own produce. Webinars and workshops on diverse topics are also available.

Peer Support and Nutrition Education

The research team also interviewed a peer support and nutrition education program that has been operational since 2012 and runs September - April. This program aims to engage students in experiential learning to develop food skills and nutrition literacy within the university community. The program offers various services including cooking demonstrations, nutrition booths with trivia, and other food-related events. They also have a rewards system in place each time a student purchases a fruit, salad, or dairy product, their card is stamped and after nine stamps, the student receives a free whole fruit or carton of milk.

The program is implemented by a team including a dietitian who oversees the program who works for the post-secondary institution, the hospitality department who runs food services, ancillary services, along with a significant number of student volunteers. Graduate student volunteers serve as program designers, undergraduate nutrition students act as peer educators, and an executive team oversees the initiative. The executive team is made up of students who can gain leadership experience for 6-8 months.

The Food Hub

To address rising food insecurity on campus, a post-secondary school launched a volunteer and student-run organization implementing programs such as a café, community fridge, produce market, and free meal distribution. These programs provide food resources, free food through a food bank, affordable products at the market and café, and educational opportunities at a farm. Services are available from September to April, Monday to Friday, with free food on Fridays.

Challenges include the hub's location, which may affect accessibility, and the lack of demographic data on program users. Funding comes from fundraising campaigns, board support, sponsorships, donations, student fees, business investments, and subsidiary contributions. The program reports that an increased community involvement has positively impacted awareness of food insecurity among students.

The initiatives are funded through a variety of sources including fundraising campaigns, donations and sponsorship. While there are staff that oversee the program, it is driven by student volunteers.

For example, the café is a non-profit student-run food service outlet that uses local, nutritious and affordable ingredients to prepare free meals for students. Volunteers develop their food preparation skills and share food skills to prepare food.

Food Centre

One post-secondary school addresses food insecurity through programs such as food hampers, food drive events, a fresh market, and a horticulture club under the uFood umbrella. For example, any student may freely access up to four hampers per semester in the fall and winter semesters and one hamper in the spring and summer semester. The market program is operated as a store where students pay for items they want. Their option includes fresh fruits, vegetables, spices and dry goods at low prices.

The program is implemented through the student union in conjunction with the city food bank and student volunteers are heavily involved in the implementation. It is marketed through in-person outreach and events like Welcome Week.

The program team noted some barriers such as stigma, limited resources, and inconvenient pick-up times. The market's location and product costs also pose challenges, despite efforts to reduce prices.

Food Pantries and Food Campus Gardens

While accessing funding and finding student volunteers has been a challenge, a post-secondary institution through the student union implemented initiatives years ago to address the rising food insecurity. These initiatives help students access nutritious meals such as food pantries, fresh produce deliveries, community gardens and programs where people can learn more about food security and reducing stigma.

Food pantries are in or close to the campus libraries and are stocked weekly. Items are free, and students can take what they need from them including snacks, canned goods, rice, pasta etc. Students can also donate products or volunteer to stock the pantry. There is also a form available to adopt a pantry by restocking it weekly. While staff supervise, volunteers and students run the program.

7.0 Considerations

7.1 The Food Guide Friendly Initiative

The Food Guide Friendly Initiative by Health Canada is a voluntary program aimed at encouraging publicly funded institutions to create healthier food environments. The initiative particularly targets post-secondary institutions and recreational settings, which are seen as key environments for fostering healthy behaviors among children and youth (Health Canada, 2024, para. 2).

This initiative focuses on increasing the availability and appeal of nutritious foods and beverages through strategic pricing, placement, and promotion. The goal is to support individuals in making healthier food choices by improving the food environment, which includes making nutritious options more visible, available, promoted, and affordable (Health Canada, 2024, para. 1). Health Canada emphasizes that creating a supportive food environment is crucial for public health, as it helps individuals align their eating habits with Canada's Dietary Guidelines.

According to L. Mawani (personal communication, February 6, 2025) who is a Policy Analyst with Health Canada, the food guide friendly initiative is currently being transitioned into an online toolkit. The toolkit will incorporate learnings from the pilot phase of the program and will include resources to support publicly funded institutions that sell food and drinks to create healthier food environments, such as an assessment tool and action plan template. Currently there is no timeline in place for the launch of the toolkit.

A few post-secondary institutions such as York University, Carleton University, and Algonquin College have pledged to implement the Food Guide Friendly Initiative. For more information, visit Health Canada's official page on the Food Guide Friendly Initiative [here](#).

7.2 Peer Health Workers

Waterloo Region Public Health supports community organizations by providing funding to hire Peer Health Workers, who receive training from Public Health Dietitians. These Peer Health Workers deliver services and programs aimed at promoting health within their communities. B. Urban, Public Health Dietitian with the Region of Waterloo Public Health, states that the region offers both initial and ongoing training and resources to community organizations (personal communication, April 8, 2025). In addition, Public Health Dietitians are available to support training of existing student volunteers within the college community.

7.3 Food Premise Operations

Most colleges collaborate with third-party food service providers, such as Conestoga College's partnership with Chartwells run by Compass Group Canada for cafeteria operations. Developing a Request for Proposal (RFP) and contract is crucial to clearly define expectations regarding the provision of nutritious, affordable, and culturally appropriate food. Additionally, contracts can encompass objectives for enhancing local food procurement and implementing waste-management initiatives.

7.4 Snapshot of Conestoga College

The research team conducted a brief evaluation at each Conestoga College campus to determine the following:

- **Healthy Plate Availability:** Assess whether it is feasible to eat according to the [Healthy Plate](#) within the campus food premises the day of the site visit.
- **Meal Availability:** Evaluate if students or staff can purchase meals during evenings or weekends at the campus.
- **Healthy Vending:** Explore if vending machines stock healthy beverages (outside bottled water) or snacks the day of the site visit.
- **Cooking Facilities:** Investigate the potential for students to cook together on campus, including the availability of kitchen facilities or suitable spaces by asking the Campus Manager.
- **Gardening Opportunities:** Examine the availability of land, of any size, which could potentially be used for gardening by asking the Campus Manager.

The findings are summarized in the table below:

Campus	Healthy Plate Availability	Meal Availability	Healthy Vending	Cooking Facilities Available	Gardening Opportunities
Doon	Yes 4/5 food premises	Yes	No	Yes	Yes
Cambridge Fountain	Yes 1/3 food premises	No but sometimes have vending	Sometimes	Yes	Yes
Cambridge Reuter	No 0/1 food premise	No	No	Yes	Yes
Waterloo	Yes 1/2 food premises	Yes	No	Yes	Possibility once renovations completed
Guelph	No 0/1 food premise	No	No	Yes	No
Kitchener Downtown	NA – no food premise	No	No	Yes but limited	No
Brantford	NA – no food premise	No	Not assessed	Yes but limited	No
Milton Parkhill	No 0/1	No	No	Yes but limited	No
Milton Steeles	NA – no food premise	No	No	Yes but limited	No
Stratford	Not yet available			Yes	No

This data shows that:

- There is a lack of available **nutritious foods to purchase**, including during the evening and on weekends at some campuses
- There is a potential to implement **cooking sessions/demonstrations** as well as **collective/community kitchen** models at all campuses
- There are opportunities to enhance **healthy vending** options across all campuses
- There is a possibility of leveraging land to **garden** at some campuses

Recommendations

1. **Form a Coalition:** Consider investing in a model that brings together stakeholders from across the campus community to address not only food security but also looks at the broader food environment. This group may also look at adopting a food strategy or food charter such as [Food Strategy and Vision Humber College](#)
2. **Expand Peer Volunteer Program:** Develop the current Peer Wellness Navigator program to include a specialization in food skills and nutrition education, ensuring volunteers receive complimentary training from Public Health Dietitians with the [Region of Waterloo Public Health Peer Program](#). Consider leveraging students from food-related programs such as Nutrition and Food Service Management and within the School of Hospitality & Culinary.
3. **Implement Emergency Food Access Initiative:** Introduce emergency food access program that utilizes a pantry model, allowing students to easily access food options based on their preferences. Include an educational component delivered by peer volunteers while examining registration process that reduces barriers and stigmatization such as the [Flexible Food Selection Program at George Brown College](#)
4. **Invest in Cooking Together Programming:** Implement community/collective kitchens or food demonstrations at each campus to facilitate students cooking and learning together, while enjoying budget-friendly snacks/meals. These initiatives can be managed by peer volunteers and overseen by a college or student association such as the [Collective Kitchen at Fanshawe College](#).
5. **Expand Community Gardens:** Apply lessons learned from the pilot Community Garden at the Cambridge campus to establish community gardens across all Conestoga College campuses where there is available land.
6. **Investigate Healthier Vending Options:** Explore vending opportunities that provide healthier food choices and vending meal options, particularly for campuses without a food premise or those that are not open during evenings or weekends.
7. **Enhance Nutritious and Affordable Food Options:** Establish guidelines in upcoming RFP processes and commit to the Food Guide Friendly Initiative to improve the availability of nutritious and affordable food options for sale within Conestoga College campuses similar to [Algonquin College Food Guide Friendly Pledge](#)

References

- Almoraie, N. M., Alothmani, N. M., Alomari, W. D., & Al-amoudi, A. H. (2024). Addressing nutritional issues and eating behaviours among university students: A narrative review. *Nutrition Research Reviews*. <https://www.cambridge.org/core/journals/nutrition-research-reviews/article/addressing-nutritional-issues-and-eating-behaviours-among-university-students-a-narrative-review/1CE93E9FFFFC7510653DDAA8FC08BF9B>
- Andrade, J. (2020). P37 Cook it fresh – peer-led, plant-based cooking demos for a college campus community. *Journal of Nutrition Education and Behavior*, 52(7), S32-S33. <https://doi.org/10.1016/j.jneb.2020.04.082>
- Aramark. (2024, September). *Canada Progress*. <https://heyzine.com/flip-book/3b52a3fa23.html#page/1>
- Bernardo, G., Jomori, M., Fernandes, A., Colussi, C., Condrasky, M., & Pacheco da Costa Proenca, R. (2017). Nutrition and culinary in the kitchen program. *Nutrition Journal*, 16, 83. <https://nutritionj.biomedcentral.com/counter/pdf/10.1186/s12937-017-0305-y.pdf>
- Bradley, K., Silliman, K., & Morris, M., N. (2008) Evaluation of a peer-led nutrition education intervention among college students. *The FASEB Journal*, 22 (S1), 681.7. https://doi.org.conestoga.idm.oclc.org/10.1096/fasebj.22.1_supplement.681.7
- Cárdenas, M.K., Benziger, C.P., Pillay, T.D., & Miranda, J.J. (2015). The effect of changes in visibility and price on fruit purchasing at a university cafeteria in Lima, Peru. *Public Health Nutrition*, 18(15):2742-9. <https://doi.org/10.1017/s1368980014002730>
- Choi, K.P., Murray, M.J., Reynolds, D.F., & Rainville, A.J. (2010). Dietetics students and dining services executive chef transformed menus and promoted nutrition foods on campus. *Journal of the Academy of Nutrition and Dietetics*, 110 (9), 817. [https://www.jandonline.org/article/S0002-8223\(10\)00971-5/abstract](https://www.jandonline.org/article/S0002-8223(10)00971-5/abstract)
- Compass Group. (n.d.). *Chartwells higher ed*. <https://www.compass-canada.com/who-we-serve/education/chartwells-higher-ed/>
- Conestoga Student Inc. (2023). *Food security report*. <https://www.conestogastudents.com/pageassets/representation/advocacy/2023-Food-Security-Report-Final.pdf>
- Daher, J., Mountjoy, M., & El Khoury, D. (2025). The effectiveness of an online nutrition education program on varsity athletes' nutritional & dietary supplement knowledge. *Nutrients*, 17(1), 44. <https://doi.org/10.3390/nu17010044>
- Di Sebastiano, K.M, Kozicky, S., Baker, M., Dolf, M. & Faulkner, G. (2021) The University of British Columbia healthy beverage initiative: changing the beverage landscape on a large post-secondary campus. *Public Health Nutrition*, 24(1):125-135. <https://doi.org/10.1017/s1368980020003316>

- Fincher, M., Coomer, T., Johnson, J., Jose, L., Olivarez, P., & Randolph, A.J. (2018). Responses to hunger on the community college campus. *New Directions for Community Colleges*, (184), 49-57. <https://doi.org/10.1002/cc.20327>
- Gray, V.B., Grijalva-Martinez, E., Zuniga, C., Buran, M., Stamper, N., Bianco, S. SNAP-Ed programming for college students experiencing food insecurity: A qualitative process-focused evaluation. *Journal of the Academy of Nutrition and Dietetics*, 124(5), 607-627. <https://doi.org/10.1016/j.jand.2023.11.025>
- Grivois-Shah, R., Gonzalez, J. R., Khandekar, S. P., Howerter, A. L., O'Connor, P. A., & Edwards, B. A. (2018). Impact of healthy vending machine options in a large community health organization. *American Journal of Health Promotion : AJHP*, 32(6), 1425–1430. <https://doi.org/10.1177/0890117117734989>
- Hagedorn-Hatfield, R., Richards, R., Qamar, Z, Hood, M., Savoie-Roskos, M., & Vogelzang, J.L.. Campus-based programs to address food insecurity. *Nutrition Bulletin*, 47(2), 123-135. <https://doi.org/10.1111/nbu.12570>
- Health Canada. (2024). *Food guide friendly initiative*. <https://food-guide.canada.ca/en/food-guide-friendly-initiative/>
- House, J., Brons, A., Wertheim-Heck, S., & van der Horst, H. (2024). What is culturally appropriate food consumption? *Agriculture and Human Values*, 41, 863–882. <https://doi.org/10.1007/s10460-023-10515-6>
- Ken, F., & Taylor, G. (2022). Food hubs as a means to promote food security in post-secondary institutions. *Nutrients*, 14(19), 3951. <https://doi.org/10.3390/nu14193951>
- Lee K., M, Dias G.M, Boluk, K., Scott, S., Chang, Y.S., Williams, T.E., Kirkpatrick, S.I. (2021). Toward a healthy and environmentally sustainable campus food environment: A scoping review of postsecondary food interventions. *Advances in Nutrition*, 12(5):1996-2022. <https://doi.org/10.1093/advances/nmab026>
- Mann, G., Lambert, L., & Partacz, B.S. (2019). P40 Smart snacks in college: how do they match up to popular alternatives. *Journal of Nutrition Education and Behaviour*, 51(7), S50. <https://doi.org/10.1016/j.jneb.2019.05.416>
- Matthews, J.I., Zok, A.V., Quenneville, E., & Dworatzek, P. (2014). Development and implementation of FRESH – a post-secondary nutrition education program incorporating population strategies, experiential learning and intersectoral partnerships. *Canadian Journal of Public Health*, 105(4):e306e311. <https://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC6972404&blobtype=pdf>
- Mawji, I. & Grantham, S. (2023). Taking a bite out of healthy living: The impacts of food insecurity on post-secondary. *Global Health Annual Review*, 8. <https://journals.mcmaster.ca/ghar/article/download/3430/2279/15613>
- McMullen, J., Ickes, M., Noland, M., Erwin, H., & Helme, D. (2017) Development of “college chef”, a campus-based culinary nutrition program. *American Journal of Health Education*, 48(1), 22-31.

McMullen, J. (2016). The development implementation and evaluation of a campus-based culinary nutrition program for college students. *University of Kentucky Uknowledge*.
<http://dx.doi.org/10.13023/ETD.2016.118>

Murphy, R.A., Guo, J.U., Cordeiro, H., Stroshein, S., Hamilton, C., & Kozicky. (2022) Food hubs as a means to promote food security in post-secondary institutions: a scoping review. *Nutrients*, 14(10), 3951. <https://doi.org/10.3390/nu14193951>

Patel, A.I. & Schmidt, L.A. (2020). Healthy beverage initiatives in higher education: an untapped strategy for health promotion. *Public Health Nutrition*, 24(1):136-138.
<https://doi.org/10.1017/s1368980020003766>

Pohlmeier, A., Reed, D.B., Boylan, M., & Harp, S. (2012). Using focus groups to develop a nutrition labeling program within university food service. *Family & Consumer Sciences*, 40(4), 431-443.
<https://doi.org/10.1111/j.1552-3934.2012.02121.x>

Roy, R., Kelly, B., Rangan, A., & Allman-Farinelli, M. (2015). Food environment interventions to improve the dietary behavior of young adults in tertiary education settings: A systematic literature review. *Journal of the Academy of Nutrition and Dietetics*, 115(10):1647-81.e1.
<https://doi.org/10.1016/j.jand.2015.06.380>

Shurtleff, C. (2024), From food pantry to CARE center in a rural college: Our journey. *New Directions for Community Colleges*, 2024: 37-44. <https://doi-org.conestoga.idm.oclc.org/10.1002/cc.20650>

Tallant, A., Marques, B/, & Martinez, N. (2015). Dietary changes among first year university students: the peer-to-peer (P2P!) nutrition project. *The Open Nutrition Journal*, 9, 22-27.
DOI:[10.2174/1876396001509010022](https://doi.org/10.2174/1876396001509010022)

University of New Hampshire. (2012). Campus dining that makes the grade: Guiding Stars nutrition guidance program helps UNH students make healthier food choices. *ProQuest*. <https://www.proquest.com/docview/1034391865>

Zein, A.E., Vilaro, M. J., Shelnutt, K.P., Walsh-Childers, K., & Mathews, E. A. (2022). Obstacles to university food pantry usage and solutions from students: A qualitative study. *PLOS ONE*, 17(5), <https://doi.org/10.1371/journal.pone.0267341>

Appendix A – Environmental Scan

College/University	Healthy Eating Initiative (HEI) Brief Overview
Acadia University	Acadia Farm - grown to include thirty individual garden plots for the campus and community, producing organic produce for the university dining hall and local food bank. Managed by students and volunteers. Supported by partners like Chartwells, Acadia University, Acadia Students' Union, Town of Wolfville, Friends of Agriculture in Nova Scotia, Service Canada, etc.
Algoma University	AUSU'S People Garden - A campus initiative that provides free fresh produce to students, as well as staff, faculty, and community members. Dedicated to address food insecurity.
Algonquin College	Wellness and Sustainability at Algonquin College - the Algonquin Students' Association operates the Food Cupboard. It offers a variety of items, including non-perishable food, fresh produce, dairy products, and hygiene products. Additional services: student meal plans, which can be used at any of the college's food service locations. These meal plans operate on an à la carte declining balance system, where food dollars are deposited into a student's meal plan account and can be used to purchase food on campus.
BC Institute of Technology	The BCIT Zero Hunger Initiative aligns with the Sustainable Development Goal 2 (SDG 2) to address food insecurity on campus. The program focuses on providing resources for students who face food access challenges, supporting efforts like the BCIT Food Bank and initiatives that promote sustainable food practices.
Camosun College	Camosun College offers a Food Bank providing free non-perishable food items to students at both campuses. It operates with a limit of two items per day. The Bread Program offers free bread on Thursdays during the academic year. Additionally, Holiday Food Hampers are distributed in December to students in need. The Street Survival Guide lists community resources available to students facing food insecurity.
Centennial College	The Centennial College Student Association Inc. (CCSAI) Food Bank – in partnership with the Daily Bread Food Bank, the Centennial College Student Association Inc. (CCSAI) Food Bank collects and gives out food to students in need. CCSAI 'Grab and Go' Breakfast Program offers Light Breakfast items. Students can grab fresh fruit from Athletics and Recreation Wellness Wednesday's' Snack Shack. Campus dining location offers value-meal options and chef creations. Other services include Aramark's registered dietitian, The Local at Progress Campus, where you can enjoy budget-friendly house-made meals at discounted prices. The School of Hospitality, Tourism, and Culinary Arts offers Learn to Cook Demonstrations and Cook 'n Feed that aim to tackle food insecurity by offering affordable meals.
Concordia	Have a number of free meal programs run by students, use meal vouchers for campus providers, community fridge
Confederation College	Confederation College partners with Sodexo Food Services to provide students with quality, nutritious meals in a comfortable and inviting environment. They offer a variety of dining locations and flexible hours of operation. Student Emergency Food Bank (SUCCI): confidential service is available to Confederation College students.

	It's meant to assist students in rare times when food resources are unavailable. Students can access the food bank through several locations on campus.
Dalhousie University	The Loaded Ladle – non-profit cooperative of students and community members. Mission is to provide healthy, local, affordable food to campus and community. Also offers cooking classes or cook-along to community members.
Durham College	Food IQ: Growing Minds, Growing Plates - a campaign that educates on the importance of accessible, affordable and healthy food, and offers access to relevant information, programs and supports. From Hunger to Health: Food Security and Food Literacy Toolkit which helps students with food insecurity and teaches them about healthy eating. It provides tips and information on saving money, making better food choices, and understanding available support services.
Fanshawe College	The Collective Kitchen- The program is exclusively for current, full-time Fanshawe students. The Collective Kitchen provides an excellent platform for students to come together, cook meals, learn new culinary skills, and take home their creations. A chef will be present to assist participants throughout the cooking process.
Fleming College	Get the Good Stuff Program - aims to help consumers make healthier choices by highlighting foods made from fresh, simple, and nutritionally dense ingredients. Foods that meet the nutrition criteria has the Get the Good Stuff™ logo in participating dining locations. Farm To Table Program - features fresh, local produce, seasonal menus, sustainable seafood, local dairy, and fair trade coffee and tea. They also build strong partnerships with local farmers through annual visits and inviting them to the dining halls.
George Brown College	Student Nutrition Access Program (SNAP) - the Student Association's Student Nutrition Access Program (SNAP) , which the Student Association runs, aims to combat food insecurity among students. It operates a food pantry, food hamper service, other supportive programs, and community referrals. Additionally, there is the Good Food Market , held on Thursdays.
Humber Polytechnic	The Humber Room - students run the kitchen. Local Sourcing of Ingredients through local vendors/Foodland Ontario. Use of fresh ingredients from Humbers Student Learning Garden.
Kwantlen Polytechnic University	KSA Food Bank , which provides emergency food relief, and the Free Breakfast Program for students. Additionally, KPU offers discounts and resources like the Sustainable KSA Community Fridge and SPUD gift cards , as well as the KPU Seed Library for students interested in growing their own food.
Loyalist College	Eat Well Program - The program makes it easier for students to find healthier choices by highlighting menu selections with an eye-catching icon. Eat Well logo in participating dining locations for options that meet criteria such as low saturated fat, sodium, and sugars, and high fiber content. This helps students quickly and easily spot better-for-you options.
McMaster University	Community Kitchen Workshop – held monthly and free to attend for students, faculty, and members of the Hamilton Community. Dietitian Picks - Dietitian Picks are grab & go products crafted by a Registered Dietitian and chefs, designed to provide balanced, nutritious, and delicious meals.

Mohawk College	Local Food Farm Stand - Mohawk's Farm Stand sells local, healthy fruits, vegetables, and baked goods on campus, increasing access to local food and supporting region's farmers. Bounty and Eat Better Bags. As part of the Farm Stand program, weekly bags of seasonal produce are also available for purchase. Bounty Bags Filled with seasonal farm-fresh produce geared towards grocery style foods that can be prepared for a healthy delicious meal. Eat Better Bags Focus on seasonal produce that requires minimal preparation such as apples, cucumbers, and peppers. Great for snacks!
Mount Saint Vincent University	Breakfast and Beyond Program – a nutrition and food program based out of the Centre for Applied Research in Human Health. Develops recipes including a photo, preparation time, ingredients, instructions, storage tips, allergy details, nutrition facts, and alignment with the Nova Scotia School Food and Beverage Standard. Some also feature cooking or animated videos. Recipes are categorized into Hot Meals, Cold Meals, and Grab and Go options.
Queen's University	Registered Dietitian Pop-ups - Each month, the Registered Dietitian, visits residence dining halls to share valuable information about nutrition, wellness, and sustainability. Past events have included Cool Foods trivia, where they provided tips on making low climate impact dining choices and building healthy plates.
Saskatchewan Polytechnic	SAvivor Program: Managed by the Saskatchewan Polytechnic Students' Association (SPSA), the SAVivor program provides students with one breakfast and one supper per month to help them through periods of food insecurity until they can access other resources. They also have done Food Security Research
Sault College	SCSU Breakfast Program - Every Thursday morning, students have free access to a variety of foods.
Seneca Polytechnic	Seneca Soup Program -The program addresses food insecurity by providing free, fresh, healthy soup daily to all full- or part-time students in need. The program offers halal, vegetarian, vegan, and gluten-free options.
Simon Fraser University	The Food Pantry , supported by the United Way and Greater Vancouver Food Bank, provides food assistance to students in need. The Community Free Fridge offers a safe, accessible space for students to take food. Both initiatives are designed to be low-barrier and nonjudgmental, supporting students' basic needs and promoting a sense of community. SFU Food Pantry is managed by students
Thompson Rivers University	Thompson Rivers University (TRU) offers the TRU Food Security Project , which focuses on improving food access for students. It includes initiatives like food distribution, access to affordable meals, and partnerships with local organizations to reduce food insecurity. The project aims to foster community engagement and ensure students have the resources they need to thrive academically.
University of Alberta	Campus Food Bank: Operated by the University of Alberta Students' Union, this food bank provides emergency food relief to students, faculty, staff, and recent graduates. It offers a variety of food items and operates on a client-choice model, allowing users to select items based on their preferences and dietary needs.
University of British Columbia	Provides information on food, financial, and well-being support available on and off-campus. It includes links to food access options, food security initiatives, and ways to take action to promote food security. Managed by students: UBC Sprouts and UBC AMS food bank

University of Calgary	Students' Union Campus Food Bank - Managed by the Students' Union, this food bank offers emergency food relief to students in need. Affordable Food Market : Operated by the Students' Union, this market offers a variety of groceries at subsidized prices, making healthy food options. Ladle UP : A student-led initiative providing affordable soup and bread to students, fostering community engagement, and addressing food insecurity.
University Of Guelph	Student Nutrition Access Program (SNAP) - Peer-led by students of Applied Human Nutrition. Supports students in developing balanced eating habits through nutrition education and peer support. They display nutritious eating tips in dining halls. SNAP'S Stamp Cards Program rewards students with free food for making healthy choices. Stamps are earned by purchasing breakfast items before 11 a.m. or fruit and veggies from the salad bar. 10 stamps should be collected on a card to redeem a free food reward.
University Of King's College	Healthy Meals Made Easy - an online workshop where registered Dietitian shared tips on making three healthy meals a day, focusing on balancing meals with fruits and vegetables. The workshop aimed to lay the foundation for lifelong healthy eating habits. "
University of Lethbridge	Nourish Initiative : A student-led project aimed at reducing food insecurity on campus. During Nutrition Month, student clubs collaborate to organize events like the Swipe Out Hunger campaign, offering affordable meals and promoting awareness about food insecurity.
University of Manitoba	The University of Manitoba promotes sustainable land use and food systems through initiatives like the Garden for Wellbeing , which focuses on community mental health, and the Raven Medicine Cloud project, highlighting cultural and environmental aspects of campus landscapes. The university also offers sustainable food choices, with fair trade products and on-campus gardens supporting local food production.
University of northern BC	UNBC's food security initiatives include the NUGSS Food Bank , Friday Soup Lunch , and EAT Canning Circle , which work to reduce food waste and provide free food to students. Additionally, the Gleaning Abundance Program and Prince George Fruit Exchange encourage the collection and sharing of local produce to enhance community food security. The Flashfood app helps students purchase discounted items nearing expiry.
University of Regina	Campus Food Bank - Operated by the University of Regina Students' Union (URSU), the Campus Food Bank offers non-perishable food items to students in need. Food Security Initiatives : The university engages in various food security initiatives, including community gardens and partnerships with local organizations.
University of Saskatchewan	Union (USSU), uFood offers customizable emergency food hampers to students facing food insecurity. Students can select items that meet their dietary needs, reducing food waste and ensuring access to necessary nutrition. They also have programs like Fresh Market and Community Gardens and orchards. uFood program is operated by the student union.
University of the Fraser Valley	The UFV Food Security Program provides resources for students facing food insecurity. It includes the UFV-SUS Food Bank , offering free food hampers, and access to emergency financial support through the Student Emergency Fund . The program also offers resources on healthy eating, including practical tips like batch

	cooking and stocking portable snacks. Cultural and affordable food options in the community are highlighted, along with helpful resources for better nutrition
University Of Waterloo	Fresh and Balanced Program -UW Food Services is dedicated to promoting healthy eating through the Fresh and Balanced program, which aligns with the Canada Food Guide. By supporting the Food Guide-Friendly initiative, they aim to improve the food environment by offering and encouraging foods and eating behaviors that match the guidelines of Canada's food guide.
Vancouver Community College	The VCC Food Security Project aims to eliminate food insecurity by ensuring students have access to nutritious food and resources. In collaboration with the Students' Union and the VCC College Foundation, the project offers resources like water refill stations, microwaves, and low-cost food options from Seiffert Market. Additionally, students can access grocery and lunch cards, bursaries, and well-being support. The project partners with community resources such as the Greater Vancouver Food Bank to further support students.
Western University	FRESH Program – offers peer support and nutrition education to students living in residence. It also includes food demonstrations and table talk events in residence dining halls.
York University	Teaching Kitchen -Launched by the Resident Registered Dietitian, the Teaching Kitchen is a cooking class series that combines culinary instruction, nutrition education, and mindfulness to address food insecurity. In collaboration with the on-campus executive chef, these classes teach students how to prepare various recipes. The chef focuses on cooking techniques, while the RD provides nutritional insights and ingredient alternatives for dietary restrictions. The classes, which are free and include all necessary equipment and ingredients, aim to improve student wellness and food literacy.