

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Lunch Hubs: Mapping campus food preparation and eating areas at the University of British Columbia

Alex Wong, Alyssa Johnston, Karly Vanichuk, Peter Tseng, Wade Hamilton

University of British Columbia

LFS 450

March 2017

Disclaimer: "UBC SEEDS Sustainability Program provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student research project/report and is not an official document of UBC. Furthermore, readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Sustainability Program representative about the current status of the subject matter of a project/report".

Table of Contents

Executive Summary..... 3

Introduction..... 4

Methodology..... 5

Results 9

Discussion 12

Recommendations..... 14

References..... 16

Appendix A. 17

Executive Summary

This project aimed at promoting student food security and wellbeing by providing information about food preparation and eating areas on the University of British Columbia's (UBC) Vancouver campus. Students may struggle to purchase nutritionally adequate food when financially burdened by increasing tuition and housing costs (Canadian Federation of Students Ontario, 2013). Nutritionally adequate foods can be unaffordable or difficult to access on campuses and are key factors contributing to student food insecurity (Silverthorn, 2016). UBC's Wellness Centre provides strategies to students to ensure overall wellbeing, including advice on nutrition. Prior to this project, a map of public spaces to prepare and eat a homemade lunch was not available to undergraduate students at UBC. The goal of this project was to create such a map to encourage students to make and bring their own lunch to campus. We surveyed 16 buildings along Main Mall to identify such spaces also called 'lunch hubs'. We found lunch hubs in nine of these 16 buildings for a total of 16 lunch hubs. We gathered data on seating capacity, number and size of tables, fridges, number of microwaves, kettles and sinks, and availability of cutlery. We also observed lunch hub usage during peak time, Monday-Friday between 12:00-12:30 PM. We assessed usage as either (1) not busy (2) slightly busy (3) very busy. Twelve of the 16 lunch hubs have at least one microwave, six had at least one sink, and five had at least one kettle. Seating capacity was highly variable, ranging from seven to over 300 seats. The total number of lunch hubs, available equipment, seating capacity, a photo, and usage at peak time have been incorporated into an interactive Google My Maps. This map is available to UBC students and will be disseminated by the Wellness Centre. Moving forward, our team recommends that future LFS 450 students expand the scope of the project by (1) including lunch hubs from all buildings on campus (East and West Mall), (2) assessing kitchen equipment usage patterns for the entire day, (3) promoting students to work with specific faculties in developing "ideal" lunch hubs, (4) making the

map accessible on a UBC webpage, and (5) conducting in-depth surveys on students' thoughts on current lunch hubs and recommendations for improvements.

Introduction

Food security exists when “all people have physical and economic access to safe, sufficient, and nutritious food that meets their dietary needs for a healthy life” (FAO, 2006, p.1). Food insecurity is prevalent in Canadian universities, affecting approximately 40% of undergraduate students (Silverthorn, 2016). Accessibility and affordability of nutritious food are two aspects of food security which are often lacking on Canadian campuses (Silverthorn, 2016). Students are often financially burdened with increasing tuition and housing costs, and struggle to purchase nutritionally adequate foods (Canadian Federation of Students Ontario, 2013). Furthermore, over 60% of Canadian students are dissatisfied with the accessibility and cost of nutritious options on their university campus (Canadian Federation of Students Ontario, 2013). A lunch brought from home can help students eat nutritious food in an economical way because it is generally more affordable than purchasing a healthy meal on campus.

Students who bring lunch from home have control over the ingredients that go into their meals. Such control insures that dietary needs and/or preferences are met and helps promote healthy eating. Eating healthy food increases students' academic performance, brain function, wellbeing and overall productivity (Deliens et al., 2013; Howard, 2005). Finally, the total amount of waste from disposable containers should be reduced if students bring their own lunch since they are likely to use reusable containers for their lunches.

Eating one's own lunch on campus, however, is not necessarily easy. Fifteen percent of students in a survey of Canadian campuses found it challenging to prepare their lunches on campus (Silverthorn, 2016). This was in large part due to a lack of facilities, equipment, and/or time. Indeed, the UBC Wellness Centre has been receiving a large influx of inquiries from students about lunch hubs

(Tam Uden, personal communication, 2017). Institutions such as the University of Alberta¹ and the University of Toronto² already have maps showing locations of microwaves on campus. No such information including data about seating and accessibility is available at the University of British Columbia (UBC).

The aim of this project is to improve the sustainability of the campus food system by encouraging students to bring a lunch from home. We defined 'lunch hubs' as areas with equipment (i.e. microwaves, kettles, and sinks) and seating where students can prepare and consume their meals. Our team collected and analyzed data pertaining to lunch hubs for undergraduate students on the UBC Point Grey campus for the purpose of creating an interactive online map. The UBC Wellness Centre will be able to use this map to answer student inquiries about the location of facilities to prepare and eat homemade lunches and assist in promoting student wellbeing on campus.

Methodology

Literature review

The literature review conducted for the ideal and current lunch hubs on campuses across North America was done searching keywords on the UBC Library system catalog, Google web search, and Google Scholar. The keywords used in our search were "lunch hubs," "lunches," "student*," "food security," "university," "campus," "food availability," and "food accessibility."

Data Collection

We collected data Monday to Friday from February 23 to March 10, 2017. We surveyed 16 buildings located along the Main Mall of the University of British Columbia's Vancouver Campus. These buildings were chosen in collaboration with Tam Uden, Wellness Program Coordinator of the

¹https://www.google.com/maps/d/viewer?mid=1Z3ptzRKf08XAV_De-oFXMJA9qVag&hl=en_US&ll=53.52915493604909%2C-113.54680200000001&z=13

² http://map.utoronto.ca/marker/microwave_utsc

UBC Wellness Centre. The buildings surveyed included Irving K. Barber Learning Centre, AMS Student Nest, Abdul Ladha Science Student Centre, Buchanan Building (Blocks A-E), ICICS/CS Building, Chemistry Building (Blocks A-D), Earth Sciences Building, Forestry Building, Fred Kaiser Building, Hebb Building, Hennings Building, Henry Angus Building, MacMillan Building, MacLeod Building, Neville Scarfe Building and University Centre (Table 1). We decided to limit the survey to spaces accessible to the general public and undergraduate students since undergraduate students make up the majority of the student body (UBC PAIR, 2014). In addition, graduate students and faculty generally have areas dedicated to eating meals.

We gathered data on seating capacity, number and size of tables, fridges, number of microwaves, kettles and sinks, and availability of cutlery (Appendix A). We also made notes on the accessibility of seating, cleanliness and condition of the tables, floors, surfaces, and equipment. We took photographs of the lunch hubs' equipment and seating areas and collected data on peak usage time defined as Monday to Friday between 12:00-12:30 PM. We assessed usage as either (1) not busy (2) slightly busy (3) very busy. "Not busy" was defined as spaces that were at half capacity or less. "Slightly busy" was defined as spaces at more than half capacity but with seats still available. "Very busy" was defined as spaces where one would have to wait for a seat.

Map Creation

We created a Google email account (ubclunchhubs@gmail.com) to utilize *Google My Maps* to create an interactive map³ to display the lunch hubs and their amenities. The creation of this Google account will ensure that the map can be accessed and edited in the future. Initially, we created separated layers for each building that had lunch hubs to allow the user to select one building at a time, but due to the limit of fifteen layers on Google My Maps, all buildings that had lunch hubs were moved into one layer. This decision will allow for additional layers to be created if the map is to be updated in the future.

³ <https://drive.google.com/open?id=1qFtl3ZI22WHwYeQ4-MNSVepuwoE&usp=sharing>

Our team created a location pin for each lunch hub providing its specific location within the building. We also created an attribute table for all lunch hubs (Fig. 1), which consists of columns for seating capacity, microwaves, fridges, tables, sinks, kettles, cutlery, and any additional information. We then entered the data into the attribute table for each lunch hub. All photographs were then added to each lunch hub location pin.

	name	Location
1	University Centre	Basement, below Sage Bistro
2	Nest - Lower Level	Near Grand Noodle Emporium
3	Nest - Level 1	Near Honour Roll Sushi
4	Nest - Level 2	North end, near Hatch Art Gallery/immediately to the right after exiting the elevator.
5	Nest - Level 4	South end, located near patio entrance
6	Henry Angus - 1st Floor	Sauder Exchange Café
7	Scarfe - Education Students Association	Room 2F

Figure 1. Screenshot of the attribute table in *Google My Maps* showing details of some lunch hubs.

Table 1. Buildings surveyed for lunch hubs accessible to undergraduate students, and locations for lunch hubs.

LOCATION	LUNCH HUB
----------	-----------

Abdul Latha Science Student Centre (2055 East Mall)	2 nd and 3 rd Floors
AMS Student Nest (6133 University Boulevard)	Basement
	Ground Floor
	2 nd Floor
	4 th Floor
Chemistry Building Blocks A-D (2036 Main Mall)	Chemistry Resource Centre B357 – 3 rd Floor
Forestry Building (2424 / 6247 Main Mall / Sopron Lane)	Forestry Undergraduate Society (FUS) Office Room 1618 – 1 st Floor
	MacMillan Bloedel Atrium – 1 st Floor
Henry Angus Building (2053 Main Mall)	Sauder Exchange Café – 1 st Floor
The Institute for Computing, Information and Cognitive Systems (ISICS/CS) (2366 Main Mall)	Computer Science Student Society Room 021 – 1 st Floor
	Reboot Cafe – 1 st Floor
MacMillan Building (2357 Main Mall)	Agora Café – Basement
Neville Scarfe Building (2125 Main Mall)	Lobby – 1st Floor
	Education Students Association Room 2F – Basement
	Students Lounge Room 10 – Basement
The University Centre (6331 Crescent Rd)	Basement
Buchanan Building Blocks A-E (1866 Main Mall)	N/A
Earth Sciences Building (2207 Main Mall)	N/A
Fred Kaiser Building (2332 Main Mall V6T 1Z4)	N/A

Hebb Building (2045 East Mall)	N/A
Hennings Building (6224 Agricultural Road)	N/A
Irving K. Barber Learning Centre (1961 East Mall)	N/A
MacLeod Building (2356 Main Mall)	N/A

Results

Nine out of the 16 buildings surveyed contained lunch hubs. Some buildings contained more than one lunch hub, resulting in a total of 16 lunch hubs accessible to undergraduate students along Main Mall on the UBC campus (Table 1). The size, seating capacity, and equipment status of each lunch hub is widely variable. Seating capacity ranges from seven seats in the Forestry Undergraduate Society lunch hub to over 300 seats in the AMS Nest. Five lunch hubs have microwaves, and twelve of the 16 lunch hubs have one or more microwave. Five lunch hubs have one or more kettles, and six have sinks. Of all the lunch hubs surveyed, none have any cutlery available for general use. Of the 16 lunch hubs assessed over a total of five days, most were classified as “very busy” between 12 and 12:30, with people having to wait up to 10 minutes for equipment use. We produced a detailed list of all the lunch hub data including information about seating, equipment, cleanliness and usage (Appendix A).

The interactive map shows the location of all lunch hubs on the UBC campus (Fig. 2). When a location pin is selected, a supplementary window depicts the location of each lunch hub, the amount and types of equipment available as well as information on usage between the hours of 12:00 to 12:30 p.m., Monday to Friday (Fig. 3). Using *Google My Maps* as a development platform allows seamless integration across *Google* applications, making the map accessible from a wide variety of devices, including smartphones. A smartphone user with location services enabled can get directions to the closest lunch hub (Fig. 4).

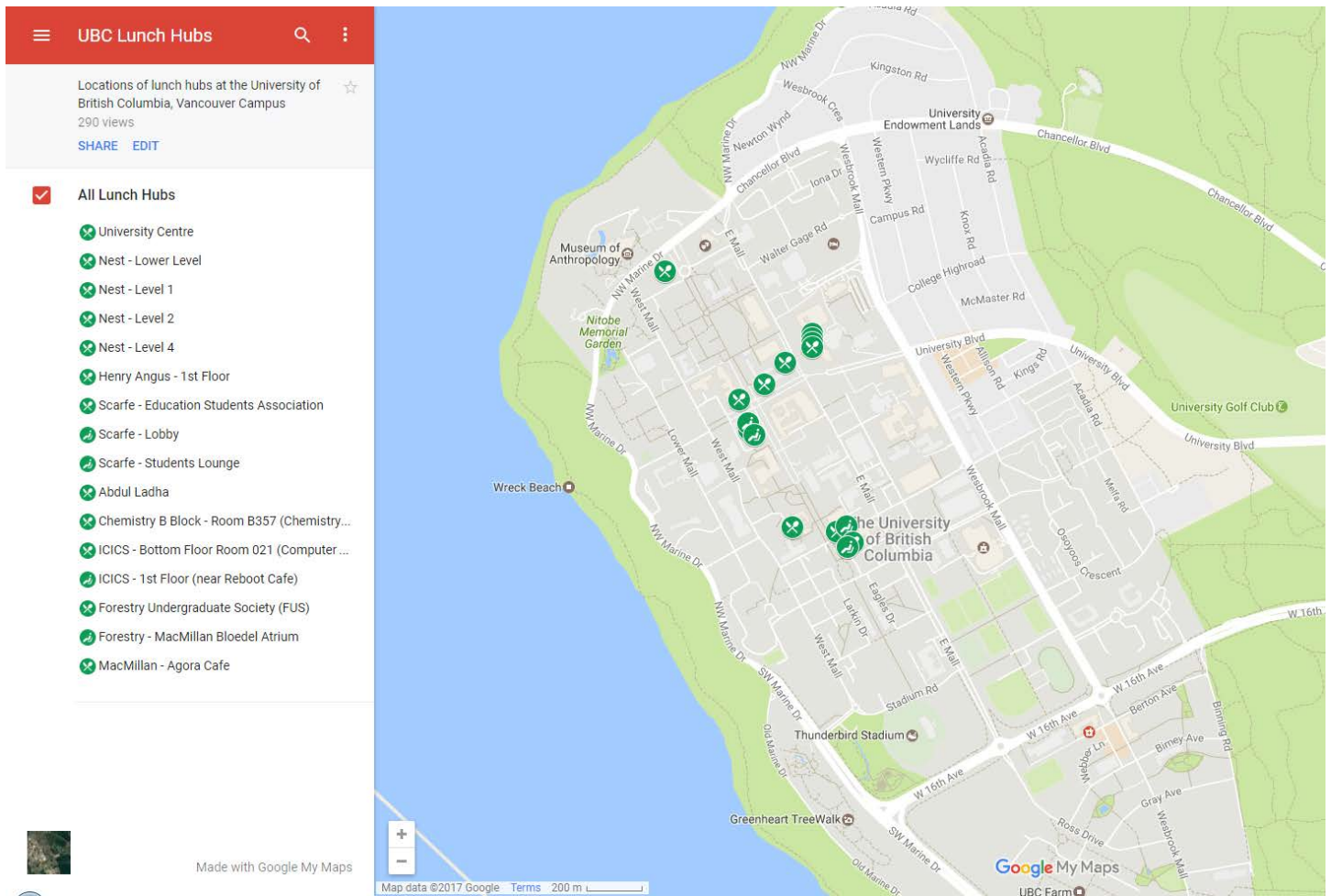


Figure 2. Initial view of the lunch hubs map available at <https://drive.google.com/open?id=1qFtI3ZI22WHwYeQ4-MNSVepuwoE&usp=sharing>.

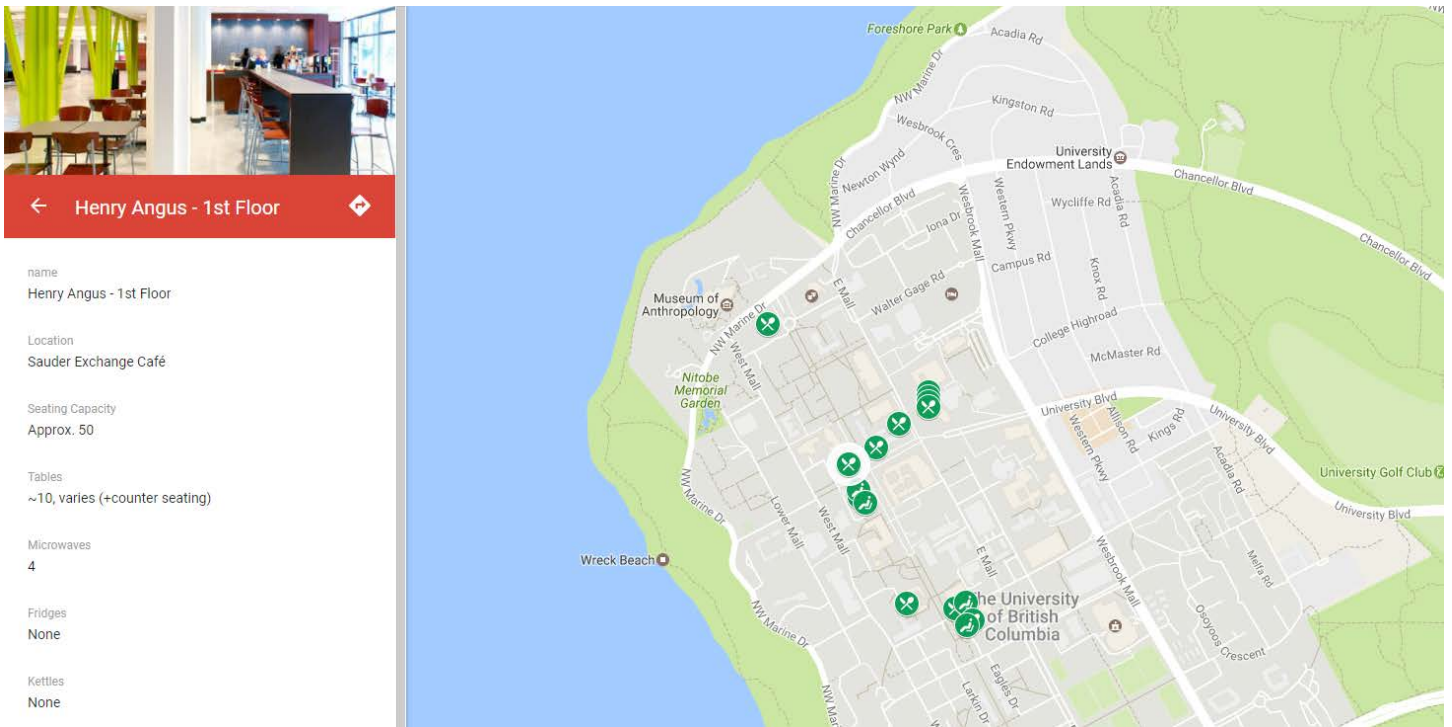


Figure 3. View of the lunch hubs map when an individual location pin is selected. In this example, lunch hub information for the Henry Angus building is displayed including information about seating and kitchen equipment.

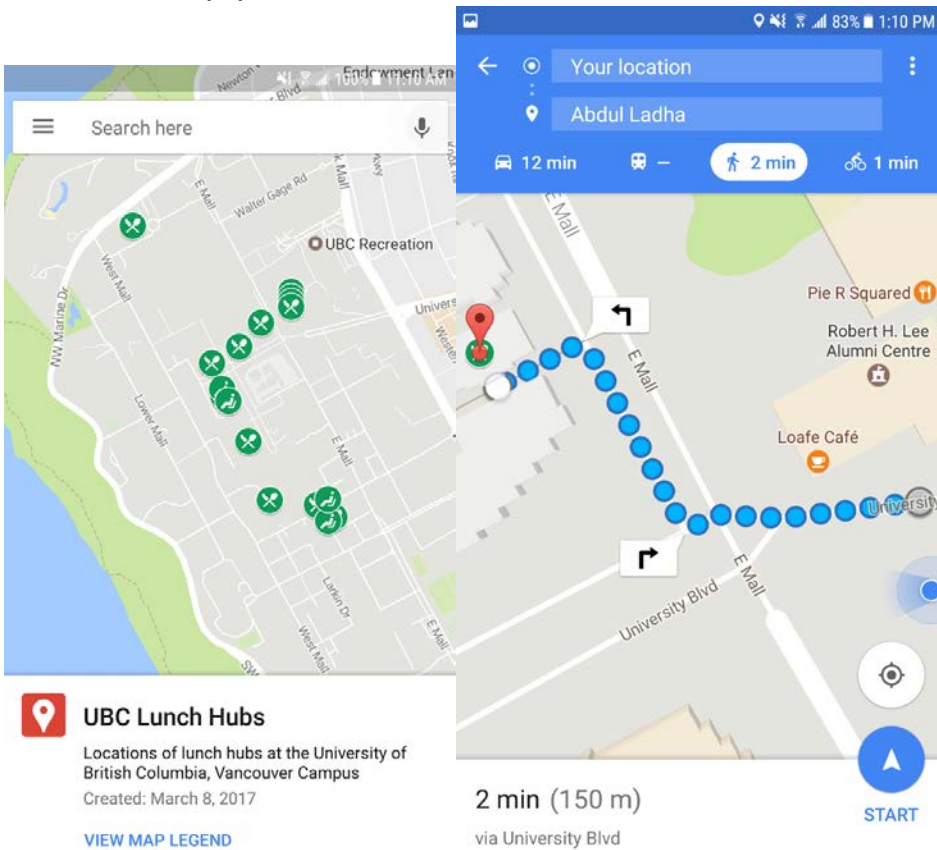


Figure 4. Screenshot of the lunch hubs map as viewed on a smartphone with enabled location services.

Discussion

We found limited academic literature on the characteristics of an ideal lunch hub or the optimum number of lunch hubs per number of students that should be provided by a university. Simon Fraser University recently redesigned a dining hall to improve the social wellbeing of their students (SFU Student Services, n.d.). The dining hall has sofas, computers, and a variety of tables and lounge seating which provides students with areas to eat as well as space to study and socialize (SFU Student Services, n.d.).

During our survey, we found that only 56% of the buildings assessed contained lunch hubs, which was lower than anticipated. There are different reasons for which some buildings do not contain lunch hubs. The Hebb and Hennings buildings are home to the departments of Physics and Astronomy. Hebb contains laboratories filled with equipment and locked rooms. Hennings consists of lecture halls and offices and is mainly used for instruction, not for eating or socializing. The Earth Sciences, Buchanan complex, and MacLeod buildings have no lunch hubs for similar reasons. Several of these buildings, such as the Earth Sciences Building contain many seats for students to study and eat their lunches, but they do not contain facilities for students to prepare or warm up their meals. Students can therefore bring lunches that do not require preparation, such as a sandwich and still be able to find space to eat their lunch comfortably. Additionally, specific faculties such as Applied Science have lunch hubs that are well equipped, but could not be included in this project because they are not accessible to all undergraduate students. Many graduate student lounges also exist and are also not accessible to undergraduate students.

While the buildings listed above do not offer lunch hubs to prepare food, eat and socialize, the AMS Nest offers hundreds of seats for students. Students generally flock to lunch hubs in the Nest or the Agora in the MacMillan Building, making them extremely busy during lunch hours. Wait times for microwaves can be up to ten minutes and seating can be difficult to find. The amount of seating and equipment is limiting students' abilities to bring and prepare their lunch.

From our observations, we concluded that microwaves, sinks and adequate seating space are all essential to the success of lunch hubs. An ideal lunch hub was one that included at least one microwave and one sink, had no longer than a three minute wait at any given time, and provided adequate seating capacity from 12:00 to 12:30 pm. Microwaves offer a very quick and practical way of warming up meals but their access is limited by high usage during peak hours. Only five of 16 lunch hubs provide a sink. Having access to water is also very important because it allows for handwashing and cleaning dishes. Washroom sinks are often available near most lunch hubs, however they are not suitable for cleaning dishes due to their small size, awkward shape, or automatic faucets that make cleanup difficult. None of the lunch hubs provide cutlery, which would be convenient but could result in problems with theft and the accumulation of dirty eating utensils.

Sufficient number of tables and seats is important for a lunch hub to be useful. We observed that there were not enough tables for the number of seats available in the Abdul Ladha building. Such a situation prevents the full utilization of the seating area, as seats without a table are often left abandoned because students cannot eat or study without access to a table. The type of table determines how seating and spacing is utilized within the lunch hub. The design of the tables should be optimized to maximize access to students. For example, the AMS Nest contains many four-person square tables, but we often saw several tables occupied by one student despite other students looking for seating. Larger cafeteria tables of ten to twelve seats prevent students from utilizing the whole table by themselves, allowing more students to have space to eat their lunches.

The lunch hub map is an efficient tool to direct students to spaces where they can prepare their meals. Using *Google My Maps* as a platform for development allowed for the map to be created within a relatively short time window of one term without the steep learning curve of other mapping software. However, the *Google My Maps* online map editor has limited functionality such as a limit of 15 layers and fewer customization options. The *Google Maps* application programming interface

(API) offers a greater degree of customization than the *Google My Maps* online map creator, but it requires knowledge of *JavaScript* which has a steep learning curve and was not suitable for the scope of this project.

Recommendations

Action

The map is currently accessible to anyone who has internet access, but has not been embedded on any UBC webpage at this time. Our recommendation for the UBC Wellness Centre is to develop a conventional information source such as a pamphlet, which would show the map URL. Alternatively, having information sheets with the map URL (or perhaps even a QR code that could be scanned to open the map instantaneously) would be a convenient means to provide students with the map so they can access it any time from a mobile device. Our second recommendation for the UBC Wellness Centre is to incorporate the map into their website as soon as possible.

Research

We recommend that SEEDS expands the map to include all buildings on East Mall and West Mall. We also recommend that SEEDS pursues this project by studying usage of lunch hub equipment for the entire day.

Of the 16 buildings we assessed, seven did not have defined lunch hubs accessible to undergraduate students. Several of these buildings have adequate seating for students to eat their lunches, but no kitchen amenities. Our second recommendation for SEEDS is to explore how basic kitchen equipment could be added so that these spaces could be utilized more efficiently by students. This sort of work could provide an opportunity to consult representatives of specific Faculties to develop an “ideal” lunch hub for their students. In addition, we recommend that SEEDS studies the cost associated with adding kitchen equipment and finds out if there is funding available for this kind of work.

Our third recommendation for SEEDS is to investigate if replacing smaller tables with larger ones encourages students to sit together, thereby optimizing the seating capacity of the lunch hub.

Our final recommendation for SEEDS is to survey UBC students using lunch hubs to understand their concerns and obtain their recommendations to improve existing lunch hubs. This sort of information should be useful to support a proposal for funding improvements to existing lunch hubs or additional hubs.

References

- Canadian Federation of Students Ontario. (2013). Final report: Task force on campus food services: A look at food accessibility and affordability in Ontario. *Canadian Federation of Students*. Retrieved from <http://deslibris.ca/ID/241451>
- Deliens, T., Clarys, P., Bourdeaudhuij, I.D., Deforche, B. (2013). Weight, socio-demographics, and health behaviour related correlates of academic performance in first year university students. *Nutritional Journal*, 12, 1-9.
- Food and Agriculture Organization of the United Nations. (2006). Policy Brief June 2006: Food Security. Retrieved from: <http://www.fao.org/forestry/131280e6f36f27e0091055bec28ebe830f46b3.pdf>
- Howard, T. (2005). Nutrition and Student Performance at School. *The Journal of School Health*, 75(6), 199-213.
- SFU Student Services (n.d.). Well-being through Physical Spaces: Dining Hall. Accessed on April 17, 2017. Retrieved online from <https://www.sfu.ca/healthycampuscommunity/physicalspaces/featuredspaces/dining-hall.html>
- Silverthorn, D. (2016). Hungry for knowledge: Assessing the prevalence of student food insecurity on five Canadian campuses. Toronto: Meal Exchange. Retrieved from: <http://mealexchange.com>
- Statistics Canada. (2015). Section 4 Student Loans and Debt. Accessed on January 29, 2017. Retrieved online from <http://www.statcan.gc.ca/pub/81-595-m/2014101/section04-eng.htm>
- UBC Office of Planning and Institutional Research (PAIR). (2014). UBC Vancouver Enrollment Report, 2014/15. Retrieved from <https://senate.ubc.ca/sites/senate.ubc.ca/files/downloads>

Appendix A: Lunch Hubs location, seating capacity, equipment, use during peak time (12 and 12:30 p.m) and miscellaneous notes. Hub Usage was defined as “not busy” when at half capacity or less, “slightly busy” at more than half capacity but with seats still available, and “very busy” when one would have to wait for a seat.

LOCATION	ROOM	SEATING CAPACITY	TABLES	FRIDGES	MICROWAVES	KETTLES	SINKS	CUTLERY	NOTES (Usage at peak time, accessibility of seating, cleanliness, condition of equipment, etc.)
Abdul Ladha Science Student Centre (2055 East Mall)	2nd & 3rd Floors	82	13 - large	0	3	1	1	0	There is a water fountain present. Facilities are slightly messy, dishes left on the side of the sink. Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy
AMS Student Nest (6133 University Boulevard)	Basement	100+	Y	0	2 - located near Grand Noodle Emporium. Only 1 appears to be functional.	0	Bathrooms only	0	Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy

	Ground Floor	100+	Y	0	3 - located near Honour Roll Sushi	0	Bathrooms only	0	Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy
	2nd Floor	~30	Row counter-tops Low tables	0	1 - located on north end near the Hatch Art Gallery/immediately to the right after exiting the elevator.	0	1	0	Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy
	4th Floor	~30	Row counter-tops Low tables	0	1 - located near patio entrance	0	1	0	Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy
Buchanan Building Blocks A-E (1866 Main Mall)	N/A								
Chemistry Building Blocks A-D (2036 Main Mall)	Chemistry Resource Centre B357	40	8 - large	1	1	0	1	0	Facilities are very clean. Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy

Earth Sciences Building (2207 Main Mall)	N/A								
Forestry Building (2424 / 6247 Main Mall / Sopron Lane)	Forestry Undergraduate Society (FUS) Office Room 1618	7	0	1	1	1	0	0	<p>Additionally has 1 small oven. Most students do not eat in the room, they are often there just to use the microwave.</p> <p>Monday: Not busy Tuesday: Slightly busy Wednesday: Slightly busy Thursday: Not busy Friday: Not busy</p>
	MacMillan Bloedel Atrium	60	7 - large 2 - small	0	0	0	0	0	<p>Floors and tables are clean.</p> <p>Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy</p>
Fred Kaiser Building (2332 Main Mall V6T 1Z4)	N/A								
Hebb Building (2045 East Mall)	N/A								

Hen-nings Building (6224 Agricultural Road)	N/A								
Henry Angus Building (2053 Main Mall)	Sauder Exchange Cafe	~50	~10, varies (+counter seating)	0	4	0	0	0	Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: slightly busy
Irving K. Barber Learning Centre (1961 East Mall)	N/A								
The Institute for Computing, Information and Cognitive Systems (ISICS/CS) (2366 Main Mall)	Computer Science Student Society Room 021	13	Row counter-tops 1 - medium	1	2	2	1	0	Small room, can be crammed. Facility is very clean. Monday: Very Busy Tuesday: Very Busy Wednesday: Very Busy Thursday: Very Busy Friday: Very Busy

	Reboot Cafe	72	11 medium	0	0	0	0	0	<p>Facility is clean. Tall tables and counters make seating inconvenient. Monday: Slightly busy Tuesday: Very busy Wednesday: Slightly busy Thursday: Slightly busy Friday: Slightly busy</p>
Mac-Leod Building (2356 Main Mall)	N/A								
MacMillan Building (2357 Main Mall)	Agora Cafe	100	1 - extra large 2 - large 3 - medium	0	1	0	0	0	<p>Facility is clean except for the microwave, which is slightly dirty. Monday: Very busy Tuesday: Very busy Wednesday: Very busy Thursday: Very busy Friday: Very busy</p>

Neville Scarfe Building (2125 Main Mall)	Lobby	31	11	0	0	0	0	0	Facility is clean. Monday: Not busy Tuesday: Slightly busy Wednesday: Slightly busy Thursday: Slightly busy Friday: Slightly busy
	Education Students Association Room 2F	15	3	1	4	2	0	0	Facility is clean. Monday: Not busy Tuesday: Not busy Wednesday: Not busy Thursday: Not busy Friday: Not busy
	Students Lounge Room 10	42	16	0	0	0	0	0	Monday: Not busy Tuesday: Not busy Wednesday: Not busy Thursday: Slightly busy Friday: Slightly busy
The University Centre (6331 Crescent Rd)	Lobby	25	10	0	1	0	1	0	Monday: Not busy Tuesday: Not busy Wednesday: Not busy Thursday: Not busy Friday: Not busy