



Final Report: Clean Plates at State Fall 2018

RHS Sustainability- Elizabeth Lytle & Emma Bellini

**RHS Mission Statement and Vision:** “We are built on a foundation of integrity, service and effectiveness. We believe in creating and delivering unequalled experiences, products and services to the students and many guests of Michigan State University. We believe in a culture of learning and collaboration that empowers staff to achieve collectively far more than is possible for any one individual.”

**Culinary Services Mission Statement and Vision:** “Through culinary excellence, we create experiences that assist in advancing knowledge and transforming lives. We strive to nourish, inspire and enrich our Spartan community.”

**Goal of Clean Plates at State:** To determine the amount of post-consumer food waste at MSU dining halls, and analyze its implications for culinary services. The data and observations from this study will help culinary services to better understand their customers’ needs as well as identify areas of improvement for culinary team members.

**Total:** In fall 2018, we had 11,964 patrons participate in our study and a Zero Waste rate of 26%.

**Introduction:** Nine dining halls on MSU campus participate in Clean Plates at State. The Clean Plates at State study first started in spring 2012.

Equipment:

- Two 6 foot long tables  Provided by Culinary Staff
- Towels/Rags
- 2 sanitizer buckets with warm water
- Gloves
- Clean Plates at State promotion banner  Advertisement of Clean Plates; promoted by RHS Sustainability with help from Culinary Services
- 4 Spartys cardboard cutouts
- 2 Carts to put scales, registers, and other equipment on
- 2 Registers reprogrammed for CPAS  Technology of Clean Plates; provided by Information Services
- 2 Scales
- Aprons
- Clean Plates stickers
- Clickers
- Ruler
- Pen and paper
- Conversion charts
- Attendance sheets

**Methods:**

A Clean Plates at State employee first determines the different plate types there are at each dining hall. Three samples of each type of plate is used in order to account for the variability among plate weights because it is not feasible to weigh every single plate used at the dining halls. This weight provides the tare for our scales so that



the weight of the plate does not factor into the weight of the food waste. These numbers are recorded and uploaded to Sequoia, a web-based system for data.

Both of our Clean Plates registers contain the dishes used at each dining hall and their respective tare weights. The patrons bring us their plates and we condense any leftover food onto one plate. The one plate of food waste is equivalent to one patron. The registers record the weight of the food waste on the plate. This information is then downloaded to Sequoia.

This information allowed us to determine:

- 1) Total number of patrons who ate at the dining hall during the lunch period from 11:30 a.m. to 1:30 p.m. and the dinner period 5 p.m. to 7 p.m.
- 2) Number of patrons with food waste.
- 3) Number of zero waste patrons.
- 4) Pounds of food wasted.
- 5) Average food wasted per person in pounds.
- 6) Average food wasted per person in ounces

To count the number of “Clean Plates” or waste free plates, a volunteer would hold a clicker and use it to count the number of zero waste plates we saw during the measurement period. Waste free is defined as all edible food is eaten; therefore, bones, peels, and other inedible pieces did not count against the patron.

This information was then made into graphs.

\*Important: All waste numbers unless otherwise specified, are waste measured in one day, referring to lunch and dinner study periods.

Graphs and data were created and analyzed by using Excel, Excel Data Analysis Toolpak, and Statistical Package for Social Sciences.

The test for significant correlation for Figures 1A-F and Figure 1H were done using Pearson's correlation, coefficient also known as Pearson's R. The R value was calculated using "Social Science Statistics: Pearson Correlation Coefficient Calculator (socscistatistics.com)". If the R-value is between 0-0.49, then correlation is considered weak. If the R-value is between 0.50-0.79, then correlation is considered moderate. If the R-value is between 0.80-1.0, then the correlation is considered strong. To determine significance of the correlation, the R-value had to be greater than the critical value, which can be found using Pearson's Table (webstat.une.edu). Each graph in Figures 1 A-I is a line graph that includes gaps with a trend line, or "best fit" line, through it. The gaps communicate the semesters the study was not conducted and shows that data has not been collected continuously since spring 2012. The best fit line shows the approximate direction of the correlation and is a helpful visual for interpreting the R-value. Overall, the best fit lines show a decreasing trend in average food waste ounce per patron since 2012. But compared to last year, there has been an increase in average food waste per patron at MSU during fall semester of 2018.

Figure 1A-I: Almost all data collection starts in spring 2012 with the exceptions of Akers, Landon, and Wilson. Akers finished renovation in January of 2015 and Landon finished renovation in August 2014; therefore, Clean Plates data collection starts after the renovation. Although Wilson has different dining hours than the rest, it became included in the study because a Clean Plates organizer wanted to determine the amount of food waste occurring at late night.



Figure 1A: The data entry for fall 2016 was omitted for Holden because lunch was not recorded. The Clean Plates register were not working at that time.

Figure 2 compares the average amount of food waste from lunch to dinner. This graph is a comparison of lunch and dinner at each of the dining halls. Food waste at lunch is higher than dinner at 5 of the 8 dining halls (Akers, Gallery, Landon, Holden, and Holmes).

Figure 3 shows how high and low volume halls were determined by the number of patrons who entered the dining hall and gave us their plate during the study period. If less than 1500 people, then the dining hall is considered low volume. If more than 1500 people, the dining hall is considered high volume. While Wilson is low volume, it is labeled as other because the data for that hall is food waste collected during dinner and late night only, rather than lunch and dinner.

Figure 4 uses confidence intervals to compare the average food waste per patron at high volume vs low volume dining halls during fall 2018. The difference between high and low volume halls since the beginning of the program in spring 2012 could not be calculated because individual plate data is not available from previous semesters. Also note that the difference calculated does not include Wilson in low volume dining halls due to data collected during a different measurement period than the other dining halls.

Figure 5: The pounds per patron wasted in a semester was calculated by taking the average a patron wastes in a day during the week and multiplying it by the number of days in a semester, ~102 days. A best fit line and Pearson's R were added to the graph. The number of days in a semester was based off the number of days that occurred in fall 2018 starting the last week of August to second week of December and excluding holidays. The line graph shows an increase of 0.52 pounds a patron wasted on average in one semester compared to 2017.

Figure 6 was charted to show the cumulative average food waste per patron since the start of the program. These numbers are an average of the averages calculated for each dining hall in a given semester.

Figure 7: Shows the total number of pounds of post-consumer food wasted in a semester by taking the average food waste per patron and multiplying it by the number of people that entered the cafe during that semester. It is an increasing trend in the number of pounds of post-consumer food waste; however, the R-value is below the critical value so it is not statistically significant. The figure is a line graph with gaps because data was not collected continuously since spring 2012. The numbers are calculated from the average ounces per person wasted in one day multiplied by the number of people who swiped into the dining hall in that semester. The units left are ounces (oz.) per time. For example, 8,269,088 ounces of food were wasted for fall 2018. Convert the ounces to pounds and the result is 516,818 pounds of food wasted in fall 2018.

Avg # oz./person/1 day	Number of swipes	=	1 Semester:
Fall 2018 3.16	2,616,800		<b>516,818 lbs.</b>

Both figures 5 and 7 require assumptions for this extrapolation to work.

- 1) Patrons waste the same amount of food at breakfast, lunch, and dinner.
- 2) Patrons waste the same amount of food on weekends.



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Figure 8 is the cost of food waste per dining hall in fall 2018. This graph requires the assumption made in figure 7 as well as: 1 meal = 1 plate = 1 pound = 1 person

These numbers were calculated similarly to Figure 7 but here the data is stratified by hall instead of just semester. The average number of food waste (oz.) per patron per day was calculated for each dining hall and multiplying by the corresponding number of swipes. For example, Gallery in fall 2018 had an average of 3.81 ounces of food wasted per day, times by the number of swipes into the dining hall, 386,038 people, which equals 1,470,805 ounces wasted in Fall semester 2018. Convert this to pounds and then multiply by the cost per plate at Gallery dining hall. For example, 91,925.30 pounds multiplied by \$3.29 equals a total food waste cost of \$302,434.23. We added up the food waste cost from each dining hall and got \$1,880,519.08 lost. Raw data is available upon request.

Gallery

$$\frac{3.81 \text{ oz}}{\text{patron}} \times \frac{386,038 \text{ patrons}}{1 \text{ day}} = \frac{1.4 \text{ mil oz}}{1 \text{ semester}} \times \frac{1 \text{ lb.}}{16 \text{ oz}} = \frac{91,925 \text{ lbs}}{1 \text{ semester}} \times \frac{1 \text{ meal}}{1 \text{ lb.}} \times \frac{1 \text{ plate}}{1 \text{ meal}} \times \frac{\$3.29}{1 \text{ plate}} = \$302,433$$

Calculating the waste per hall and then totaling up the number of dollars lost accounts for more of the variability in numbers than looking at the semester as a whole. Looking at the semester as a whole would result in taking the total number of pounds wasted for fall 2018 (516,818 lbs.) and multiplying by what the average cost per plate is (\$3.52), which equals \$1,819,199. Again this number is less because it is an average of the variability seen in the dining halls.

516,818 lbs	1 meal	1 plate	\$ 3.52	equals	\$ 1,819,199
1 semester	1 lb.	1 meal	1 plate		semester

**The Food Budget for fall 2018 was \$9,974,141. After taking into account each dining hall’s average cost per access, we lost \$1,880,519 due to post-consumer food waste. Therefore, 18.9% of the food budget is food waste.**

Figure 9 shows the relationship between cost per plate and total average food waste per patron since spring 2012. The cost per plate started at about \$3.30 in spring 2012 and there has been approximately a 1.07% increase since this time.

Overall Assumptions:

1. Swipes are equal to the number of people that enter into the dining hall during the fall semester 2018.
2. That the number of people who enter the dining hall waste on average the number of ounces calculated in the fall 2018 Clean Plates study.
3. The food served at each of the dining halls is of the same type and quality.
  - a. Direct questions of this type to Matthew McKune.

Abbreviations				
F= Fall	S =Spring	R = Correlation Coefficient	oz = ounce	lb= pound

and their weights in the register actually match the plates that are being served in the dining hall. If a new plate is introduced that is not in the clean plate register, then at least 3 plates must be weighed and the average taken



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to account for the variability of plate weights. For fall 2018, all of the plates and their weights were updated in the registers. Future employees need to follow these guidelines.

It is important for the Clean Plates at State study to have a constant manager or overseer. The manager of the Clean Plates at State program has a lot to control by trying to keep the data as accurate as possible. For instance, the scales must be calibrated so that the tare weight of the plate is the same on both scales. The registers must be updated and able to communicate with the scales. The manager must then have knowledge of Sequoia. I have a basic understanding of Sequoia so I could get the reports I needed to analyze the data. The next person is going to have to do the same thing; therefore, we are not taking full advantage of the programs that Sequoia has to offer. Sequoia may be able to run reports that can cut down on our analysis time or give us new ideas on how to understand the data. Sequoia training should be required.

The manager of this program could connect with our students who have an interest in food waste and gain volunteers. This person would be the face of Clean Plates at State, increasing the awareness of the program and favorable publicity. The manager could also work with the culinary registered dietician to properly address issues that may arise with students who have food restrictions or an eating disorder. The study could potentially address differences between in-state, out-of-state, and international students who may have expectations that our menu is not meeting their needs (prompting more waste).

Each new student supervisor of the study does not know how many volunteers are needed to run the study or how to probably set up the equipment at the dining halls. If I were to continue in this position, then a large percent of the trial and error would decrease because I now have the knowledge to ensure a more efficient program. This problem again shows the need for a constant Clean Plates manager.

The manager of Clean Plates at State could gain volunteers by partnering with different colleges within the university. For example, this semester Clean Plates at State partnered with HNF 440 class (Foodservice Operation). Having this partnership made sure the Clean Plates program had enough volunteers to efficiently run the study. RHS Sustainability sincerely thanks those students who volunteered their time to help with the program.

If utilized correctly, Clean Plates at State can help to increase our social responsibility, our ability to be innovative, and increase our ability to work as a team.

Overall, **data collection** during the two hour measurement periods for both lunch and dinner went well. The Clean Plates at State registers often had to be rebooted 30 minutes before the collection period. This was due to technical difficulties with the scale and register as the scale would show the weight but it would not appear on the register.

Using correct plate names is important as one plate can be mistaken for another. This happened once during the study but the error was caught quickly.

Please acknowledge there may be human error when recording the number of waste free patrons.

Overall, Figures 1A-I show a decreasing trend in the amount of food waste since spring 2012. There are several possibilities as to why we see this trend. Confirmation of these possibilities requires further study.

The following are possible reasons for the decrease in food waste:

- 1) Education and awareness of food waste among staff and students.



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- 2) Politics: Discussion of environmental policies and the human impact on the environment.
  - a. Student opinion and values: Students have increasingly showed they value sustainability efforts
- 3) New emphasis on health and sustainability
  - a. Examples include how to eat healthy, reduce obesity, diabetes, etc.
- 4) Diversification of menu items.
  - a. Including vegan, vegetarian, gluten free, and organic options.
  - b. Diversification of procurement including mixed Greens from the Bailey Student Greenhouse, and MSU Meat from the Student Organic Farm.
- 5) Renovation of dining halls
- 6) Training of culinary staff
- 7) Standardization of dish sizes: Keeping the dishes the same across dining halls streamlines training
- 8) Tray-less dining requires patrons to come back for seconds instead of taking all the food at once.

One of our original hypotheses was that there is a higher average food waste per patron at lunch than at dinner. Figure 2 shows this data and it turned out to be true for Akers, Gallery, Landon, Holden and Holmes. The dining halls with higher food waste at lunch are circled in the figure. There are differences in human behavior at these time periods that we may try to address. For instance, knowing students want quick and easy food and are in a hurry at lunch because many must get to their next class. This also means smaller portion sizes so they can eat quickly and go. Part of this also includes foods that are not too messy. If the students are in a hurry, they may not want to have to wash their hands after eating or clean up the sauce they spilled either on themselves or the table. Many students are navigating away from processed foods; therefore, it is more appealing for them to go into a dining hall and grab something freshly made than to go to a convenience store and buy a packaged sandwich.

In Figure 3, of the high-volume halls, Case has the lowest average food waste per patron. Case had the most swipes out of all the dining halls during the fall semester and also during the four hour period of the study (Lunch is 2 hours, and dinner is 2 hours). High and low volume dining halls are color coded as can be seen in the graph's legend. Overall, this graph also shows that Gallery had the most food waste per patron for fall 2018 and Wilson the least. Of the low volume dining halls, Holden had the highest average food waste per patron. The bar graph was divided into high and low volume dining halls to see if the average food waste per person is higher at the high volume cafes or low volume cafes. It is difficult to tell in this graph if people in high volume dining halls tend to waste more food than in low volume dining halls. However, figure 4 shows us that the high volume dining halls do have a higher average food waste per patron than the low volume dining halls. The average food waste per patron at a high volume café is 3.44 ounces and average food waste per patron at a low volume café is 3.08 ounces. So at a high volume café, the average food waste per patron is higher. Future studies should determine why this is the case.<sup>1</sup>

One possibility is that a larger dining hall has more food choices which increases the philosophy of "I want to try everything." Ultimately, these people take more than they need and the trays in the large dining halls help the customers to do so. Only Akers, Landon, and Shaw are tray-less dining halls. With this in mind, in 2016 Brody and Akers had the same cumulative average food waste per patron since spring 2012. That year's hypothesis was that Akers will reduce its average food waste per patron before Brody does because Akers has tray-less dining. This hypothesis was supported by this year's data shown in figure 6, where Akers has 0.10 ounces less in total average food waste per patron since 2012 than Brody. Also in figure 6, notice Holden has the highest cumulative average food waste per person even though it is a low volume hall. In fact, fall 2018 shows Holden shares a similar amount of food waste to that of Akers (figure 3). This is an example where Clean



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Plates at State would benefit having a manager because then we would know if the trend in figure 1A is due to actual food waste or partially human error, which could be due to the fact that Holden is the first dining hall measured each time RHS Sustainability runs Clean Plates at State. Each new student must figure out how the registers work, how to analyze the data, how to run sequoia, and everyone has different methodologies. Ultimately, Holden should be a target hall for food waste reduction, but I believe that Gallery is the best target for food waste reduction because as we can see in Figure 3, Gallery has the largest average food waste per person and the highest volume hall. Culinary Services and RHS Sustainability will impact more people by focusing on Gallery's food waste.

Figure 5 depicts that the number of pounds a student/patron wastes in the dining hall has significantly decreased over time. Still the average patron wasted about 20.54 pounds in fall 2018. This is equivalent to each patron having about a gallon and a half of food waste. The average college student eats about 204 pounds in a semester, and approximately 9.9 % of that is food waste. These numbers are calculated from the following:

*The average student at MSU uses their meal plan 14 times per week in a dining hall. Therefore students eat at the dining halls at least 2 times per day. We can make the assumption that they are eating lunch and dinner at the dining halls and each time take a pound of food. So 2 pounds of food each day times the number of days in a semester, 102, equals 204 pounds of food each student consumes in a semester. Multiply this by the cost per plate, \$3.52, and the average amount spent per person is \$718.08. However, this is far as I can take this extrapolation because if I then assume that all 50,000 people eat at the dining halls, then the amount culinary services would have to spend on food far exceeds the budget. Also, the 102 days includes weekends and weekdays. Originally, the plan was to not include weekends because the study only occurred during the week; however, the number of swipes into the dining halls, the food cost budget, and the average number of times a student goes into a dining hall all include weekends. We can also take the average amount of food waste per patron in fall 2018, 3.16 ounces, and multiply it by the number of days in a semester, 102, and get 20.15 pounds of food waste from each patron. Multiply this by the average cost per plate, \$3.52, and get the average number of dollars lost per patron due to food waste is \$70.93. This is 9.9% of the amount culinary services spends per patron. Overall, the average food waste per patron in one semester has gone down since spring 2012 as shown in figure 5. On the other hand, food waste has increased since 2017. Since spring 2012, we have cut food waste by 4.68 pounds.*

Figure 7 depicts a trend of increasing food waste. Although it is not a strong trend, it still shows that as time increases, so do the number of pounds of food waste. If we were to graph according to the number of swipes in the dining halls, it would also follow this trend. This is because in order to get the number of pounds of food waste in a semester, we had to take the average food waste per person and multiply it by the number of people who entered into the dining hall. Therefore, we are simply taking the trend of the number of swipes into the dining hall and making it larger by multiplying it by another number—the average food waste per person. The same is true for the number of dollars lost to food waste per semester. This also follows the trend of the number of swipes into the dining halls because again, we are multiplying by cost per access which continues the same trend. Overall, the number of pounds and dollars lost to food waste can be partially contributed to the number of people culinary services serves.

Figure 8 shows us how much money is lost due to food waste at each hall. If the halls were stratified by volume, the high volume dining halls would account for more money lost (\$1,282,318) than the low volume dining halls (\$546,272), and this is because more people means more waste. The higher volume halls will always have more for that reason. However, the low volume dining halls do have a higher cost per plate. The higher cost per plate



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could be due to a number of things, such as the low volume dining halls having less platforms, so the more expensive items are not paired with cheaper alternatives. Yet another reason for the higher cost per plate is because of increase in food waste. The average cost per plate for the low volume dining halls is \$3.97 and the average cost per plate for high volume dining halls is \$3.37. In addition, Holden (a low volume dining hall) has the highest cost per plate for this semester at \$4.32.

- Low Volume Halls
  - Landon: 3.09 ounces per person, cost per access \$3.88
  - Holden: 3.36 ounces per person, cost per access \$4.32
  - Shaw: 2.90 ounces per person, cost per access \$3.58
  - Holmes: 2.96 ounces per person, cost per access \$4.10
- High Volume Halls
  - Akers: 3.39 ounces per person, cost per access \$3.33
  - Gallery: 3.81 ounces per person, cost per access \$3.29
  - Brody: 3.55 ounces per person, cost per access \$3.74
  - Case: 2.99 ounces per person, cost per access \$3.13

Figure 9 is important as it shows the relationship between the cost per plate and the possible savings that occur due to reduction in food waste. Yes, cost per plate will increase due to inflation of food prices but it could be increasing at a more dramatic rate if food waste per person was increasing instead of decreasing. Because average food waste per person is decreasing, the difference between the cost per plate and the average food waste per customer is where we can improve savings.

Figure 10 is important because it shows the division of patrons according to food wasted in pounds. 59% of the patrons wasted between 0 and .249 pounds of food. This chart emphasizes the need for more academic outreach about food waste and sustainability.

**Conclusion:** The Clean Plates at State program/study provides valuable information for culinary services and the RHS division. This program provides evidence for the need of green foodservice operations. The cost of 1.8 million dollars per semester is too much to spend on food waste; again this is 18.9% of the food budget. If we cut food waste from 3.16 ounces to 2.5 ounces per person per semester, we would save \$380,759 dollars per semester. This money could be used to improve the dining halls, training, and much more.

**Note:**

*<sup>1</sup>In the past 10 semesters that RHS Sustainability has done the Clean Plates Program, 15.6 million people swiped into the high volume halls while only 8.4 million people swiped into the low dining hall. Yes the number of people that go into a particular dining hall matters but it does not account for the average food waste per person; because it is an average we take people out of the equation. My point here is that high volume halls do not have a large average food waste per person due to the number of people who swiped into the dining hall. This is shown in figure 6 because Holden is a low volume hall but it has the highest average food waste per person among the dining halls since spring 2012.*





### **Acknowledgements**

Another note of importance is the vital communication between Culinary Services and RHS Sustainability. Thank you to the staff who provided the 6 foot long tables, towels, and sanitizer for the study at each dining hall. These items are necessary for our set-up of the study. We appreciate your support. Thank you to the dietetics students who came to volunteer for Clean Plates at State. Thank you to the fall 2018 HNF 440 class taught by Christine Henries-Zerbe, MS, RD.

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Danny Layne – RHS Information Services, Information Technology Professional

Gina Keilen – MSU Registered Dietician

Dr. Elizabeth Wasilevich – Professor Epidemiology and Biostatistics

Recognition to Previous Clean Plate at State Employees

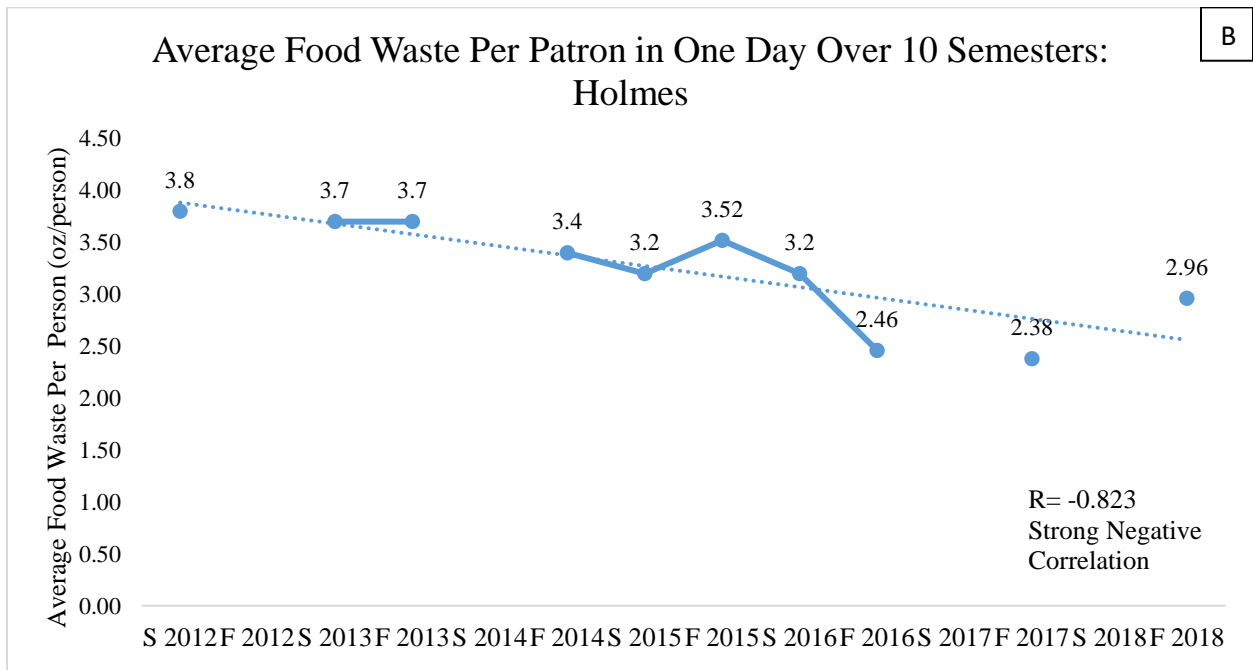
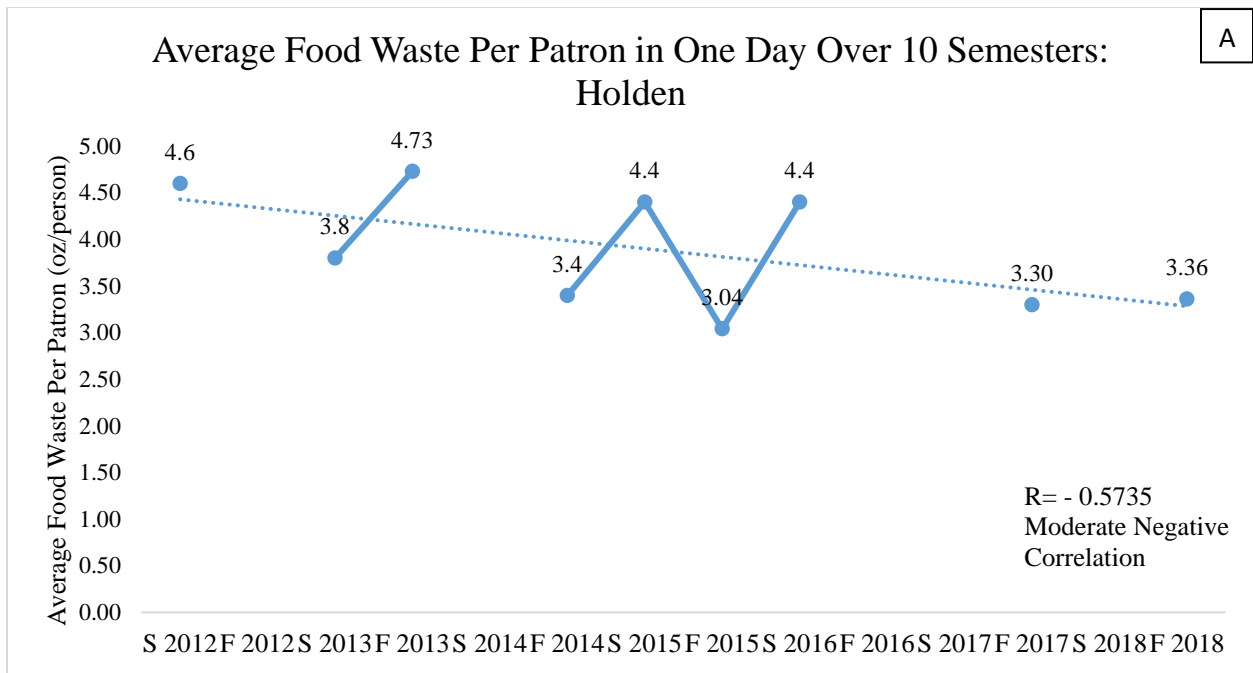
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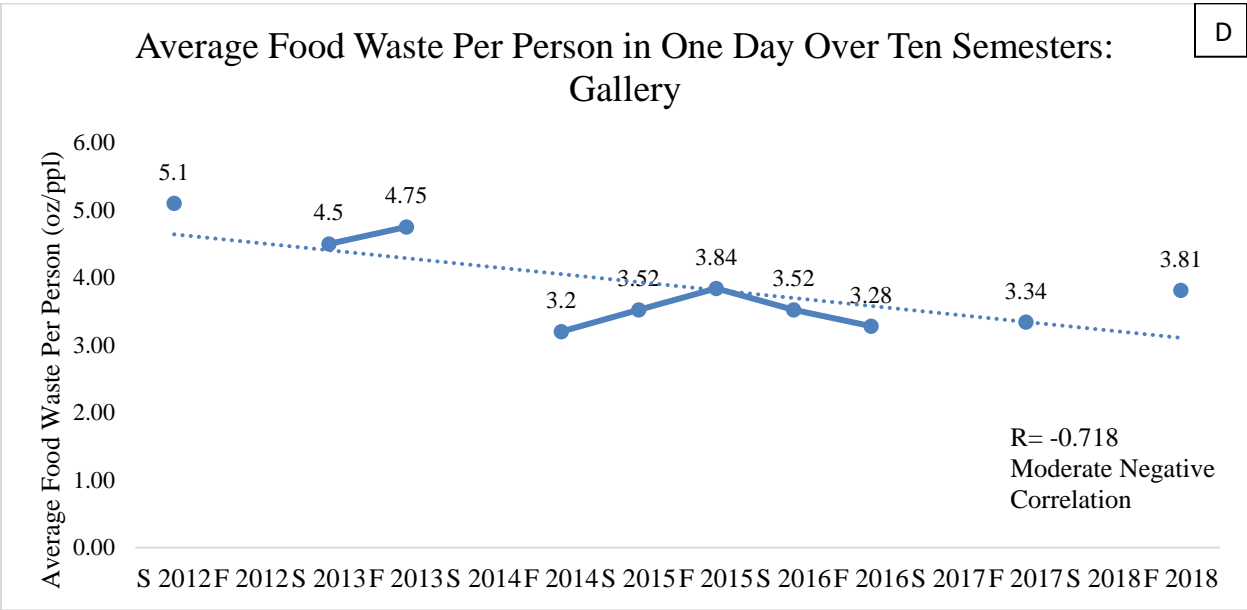
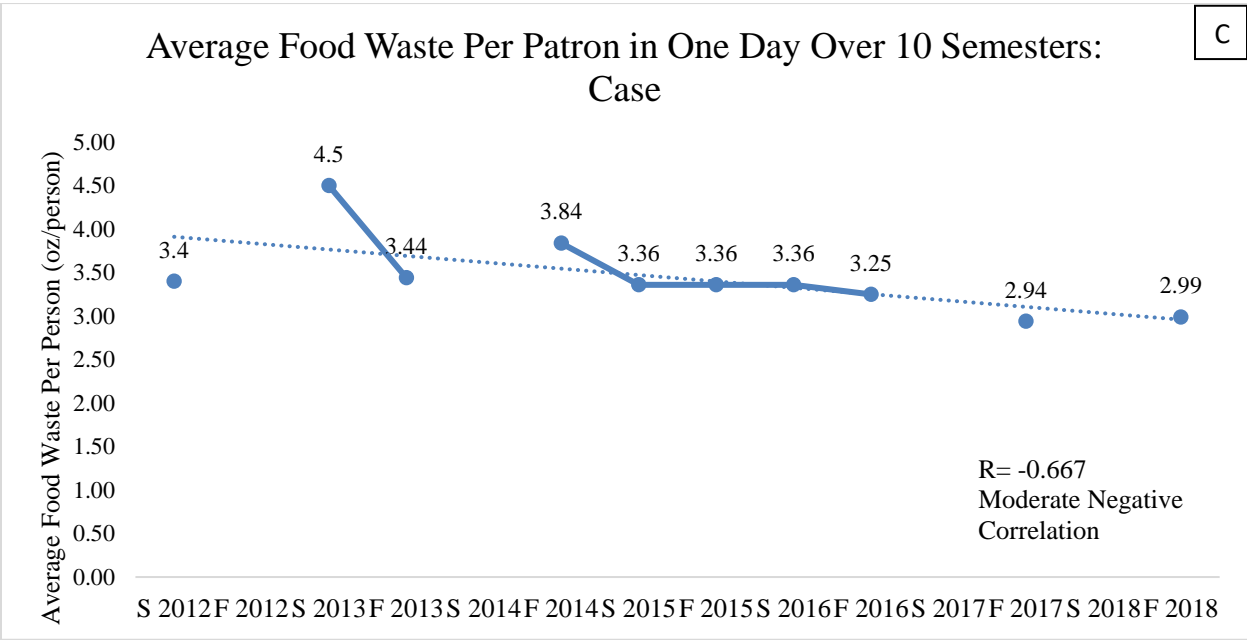
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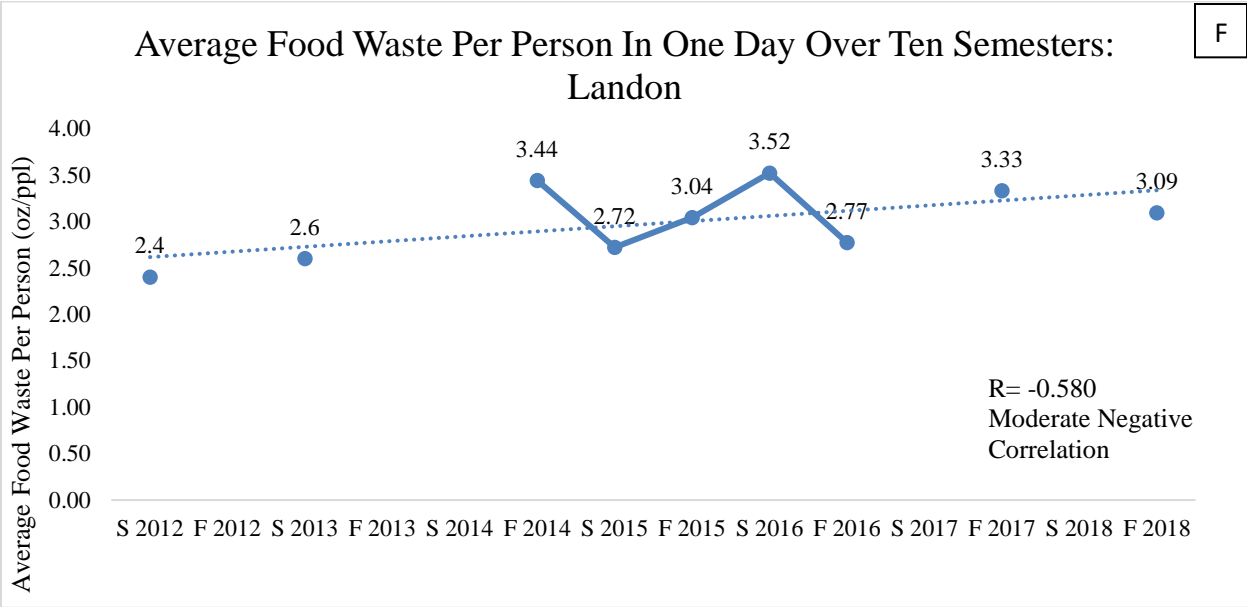
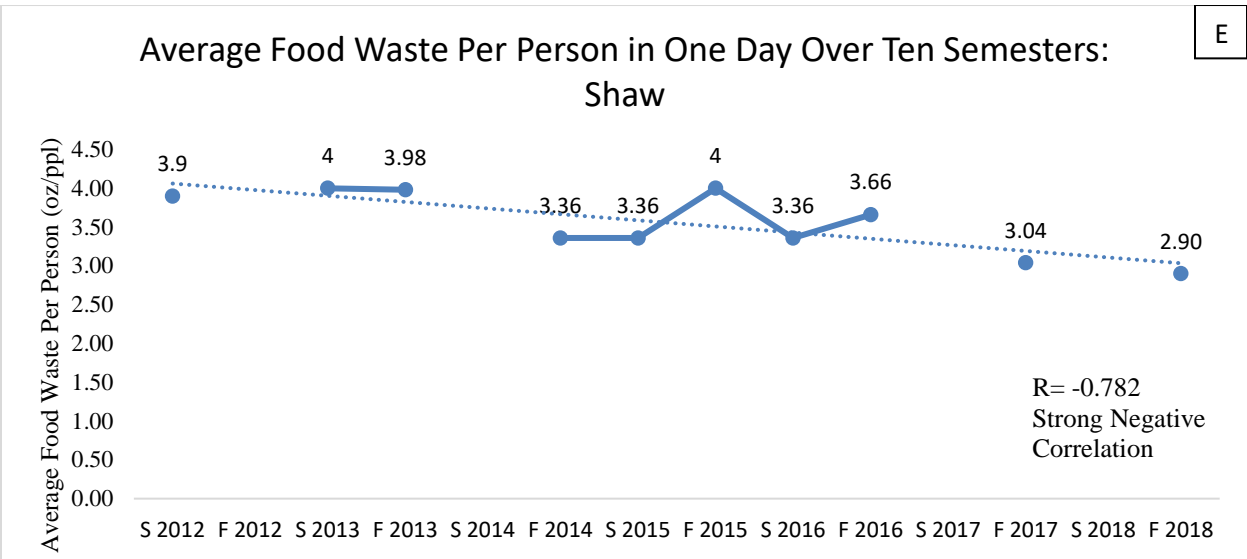
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Data:

Figure 1A-I







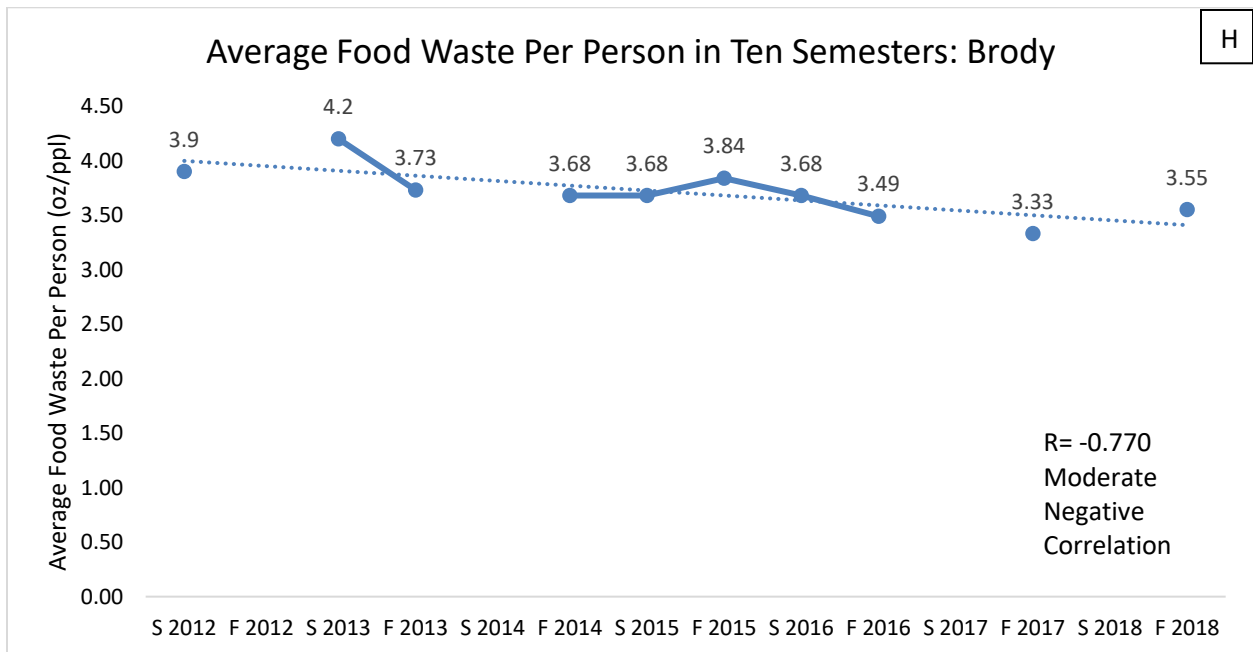
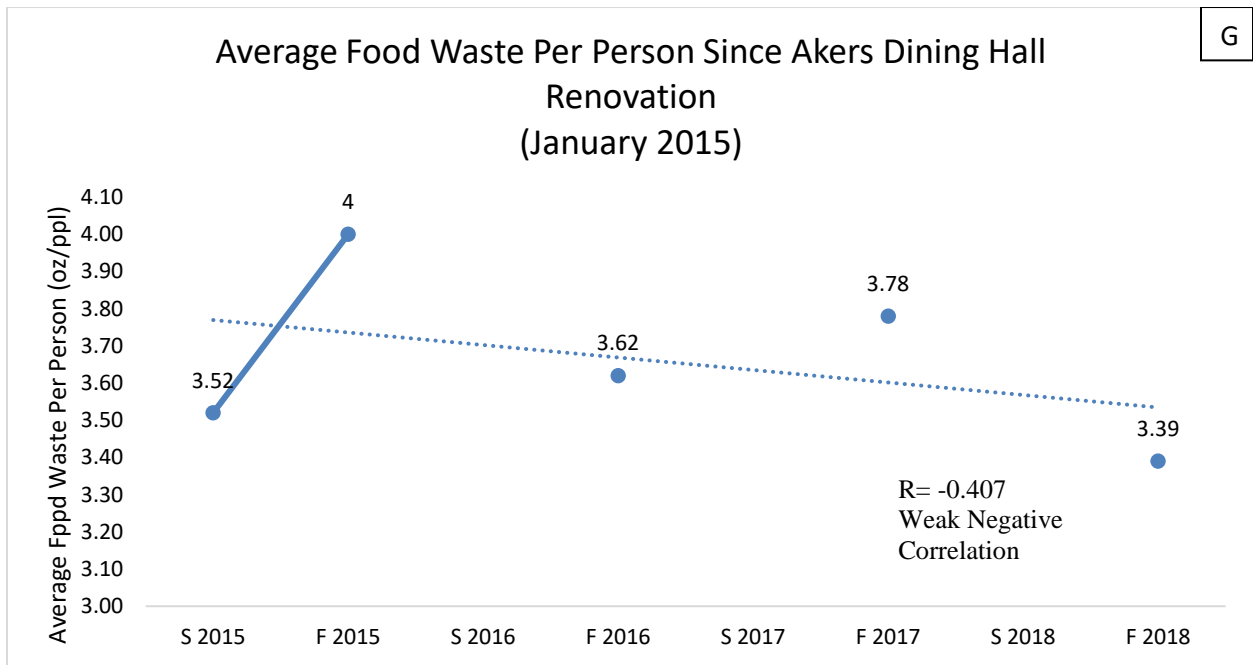


Figure 1A-H: One day refers to the two hour time data collection period at both lunch and dinner. Each of these graphs shows the food waste trend over time. The data entries are the averages of the lunch and dinner waste during the study period

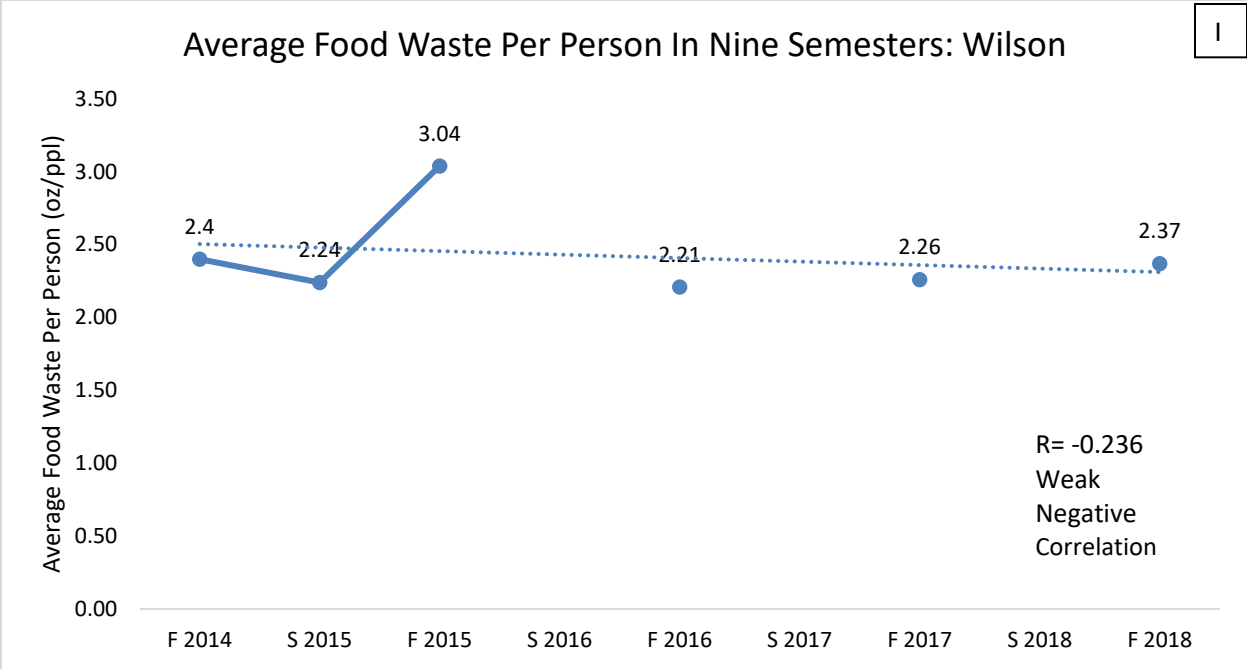
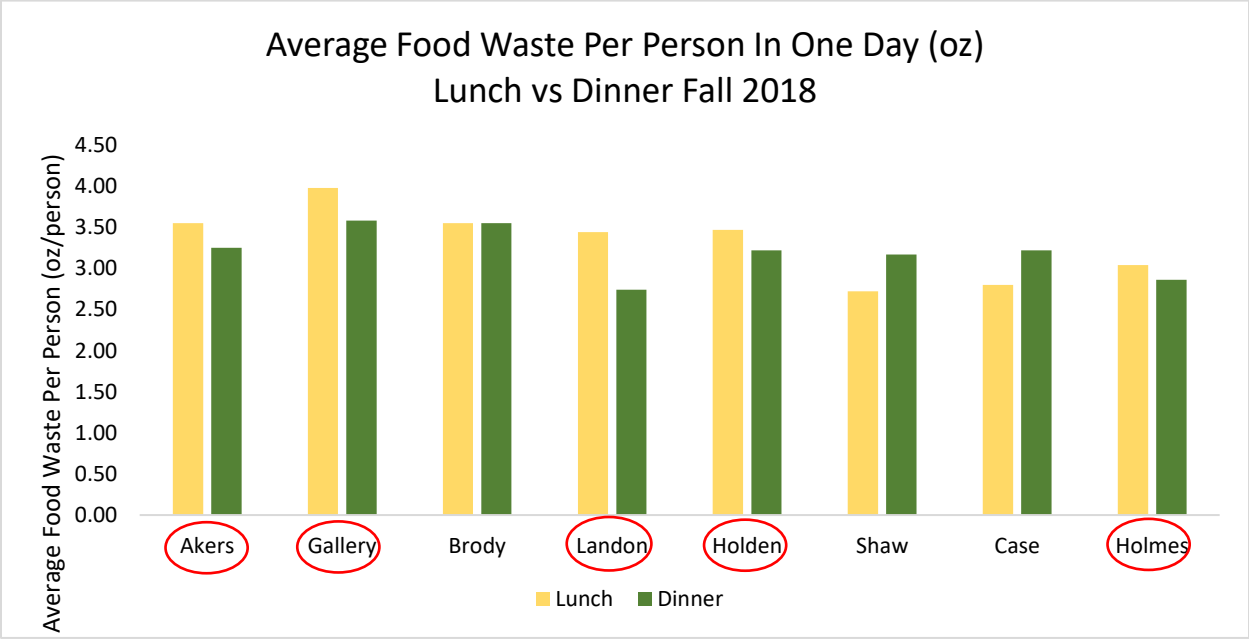


Figure 1I: Wilson is the only dining hall where we collected food waste during dinner and late night. Wilson is unique compared to the other dining halls because it does not serve lunch.

Figure 2



This graph is a comparison of lunch and dinner at each of the dining halls. Food waste at lunch is higher than dinner at 5 of the 8 dining halls. (Akers, Gallery, Landon, Holden, and Holmes)

Figure 3

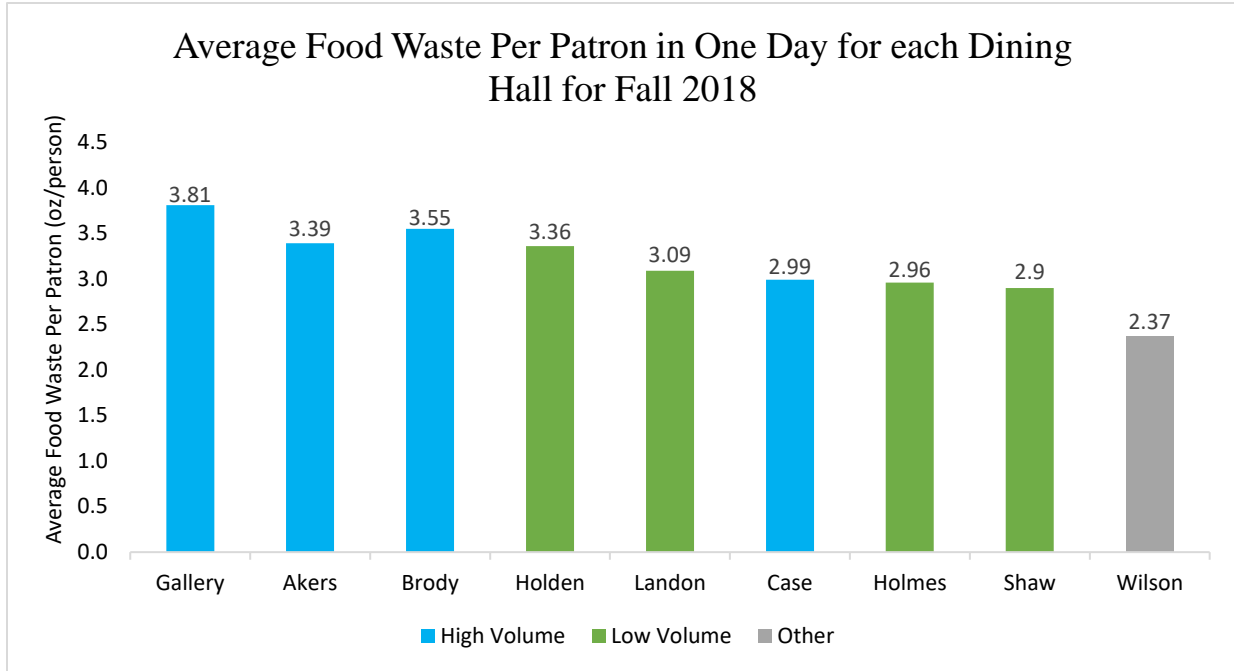


Figure 3: The above graph depicts the average food waste per patron at each dining hall during fall 2018. Gallery had the most food waste per person at 3.81 ounces. The dining hall with the least amount of food waste per person is Shaw at 2.90 ounces.

Wilson has a lower average food waste per person at 2.37 ounces; however Wilson is labeled as other because the measurements occurred during dinner and late night instead of lunch and dinner



Figure 4

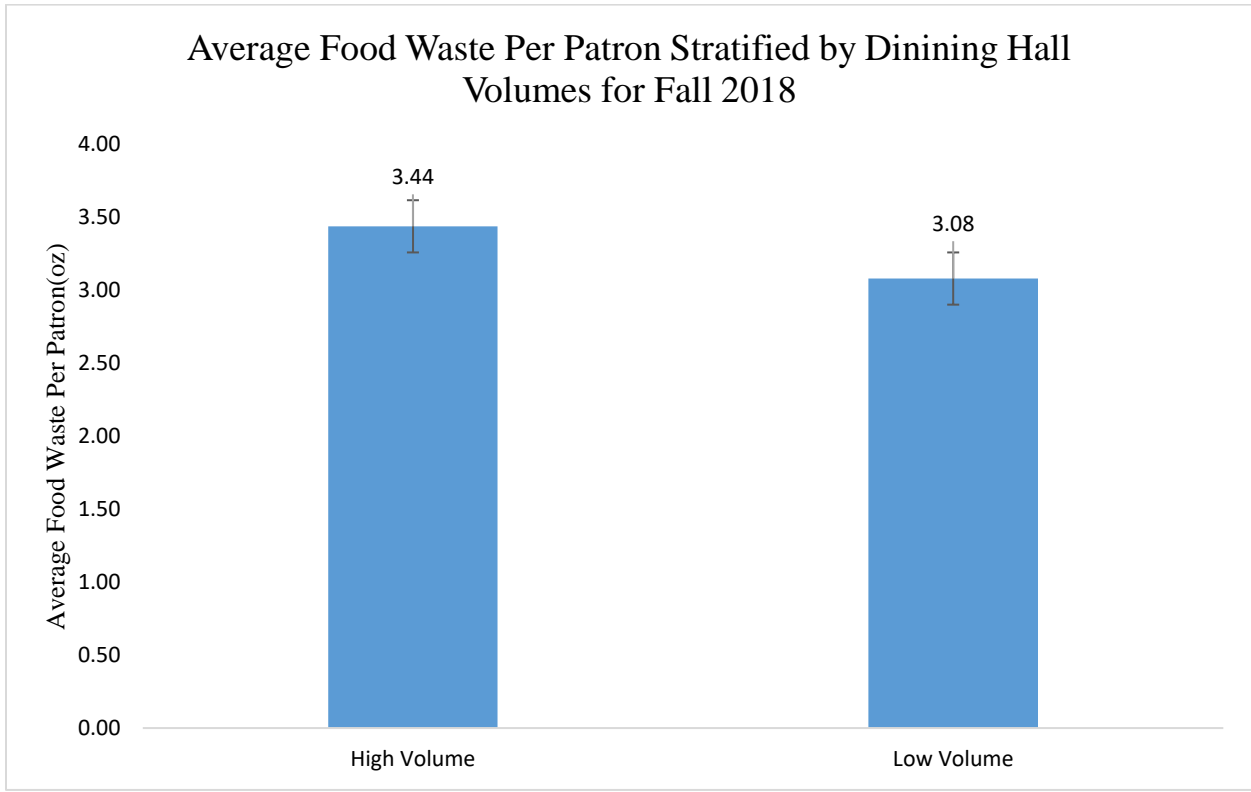
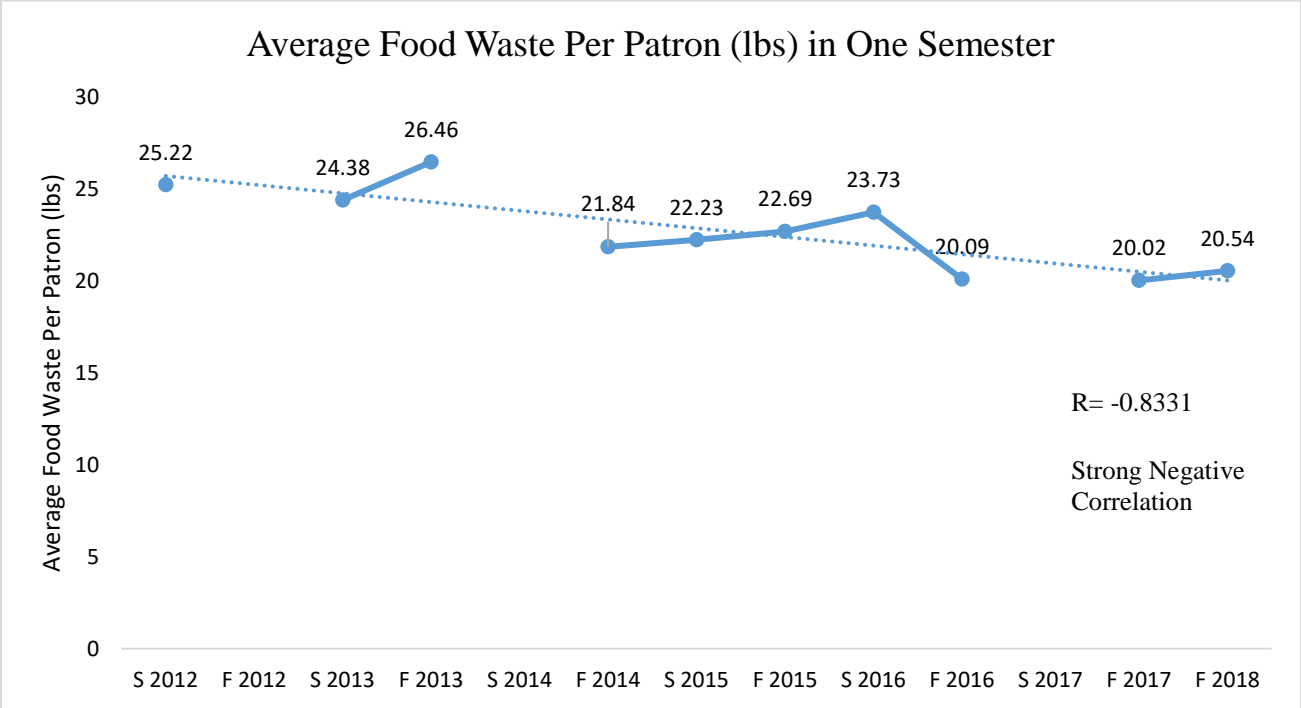


Figure 4 compares average food waste in high and low-volume dining halls.

Figure 5



At the beginning of the program, the average amount of food a student would waste during a semester was 25.22 pounds. That number has now dropped to 20.54 pounds per student per semester. Although it is 0.52 pounds more than last year, there is a significant decreasing trend overall.

Figure 6

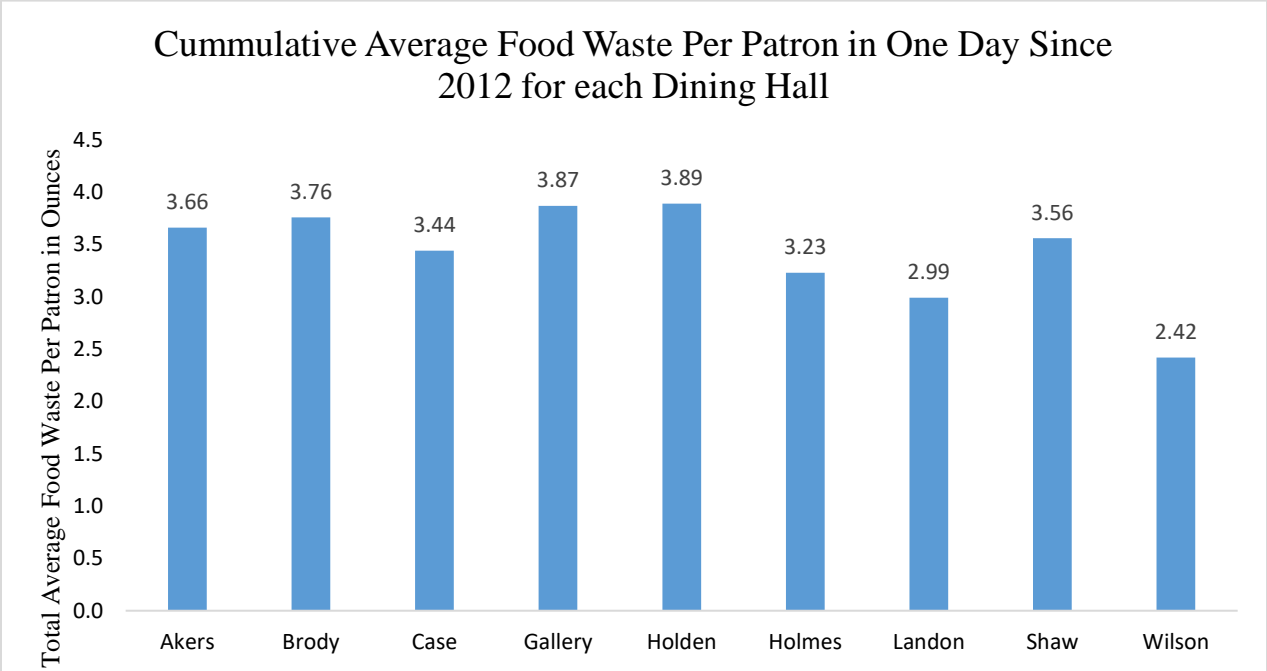


Figure 6: This graph is similar to figure 3 as it shows the cumulative average waste per patron since the beginning of the program. Holden has the highest average food waste per patron since spring 2012. Gallery, Brody, and Akers are high volume halls and are the greatest target for reduction of food waste.

Figure 7

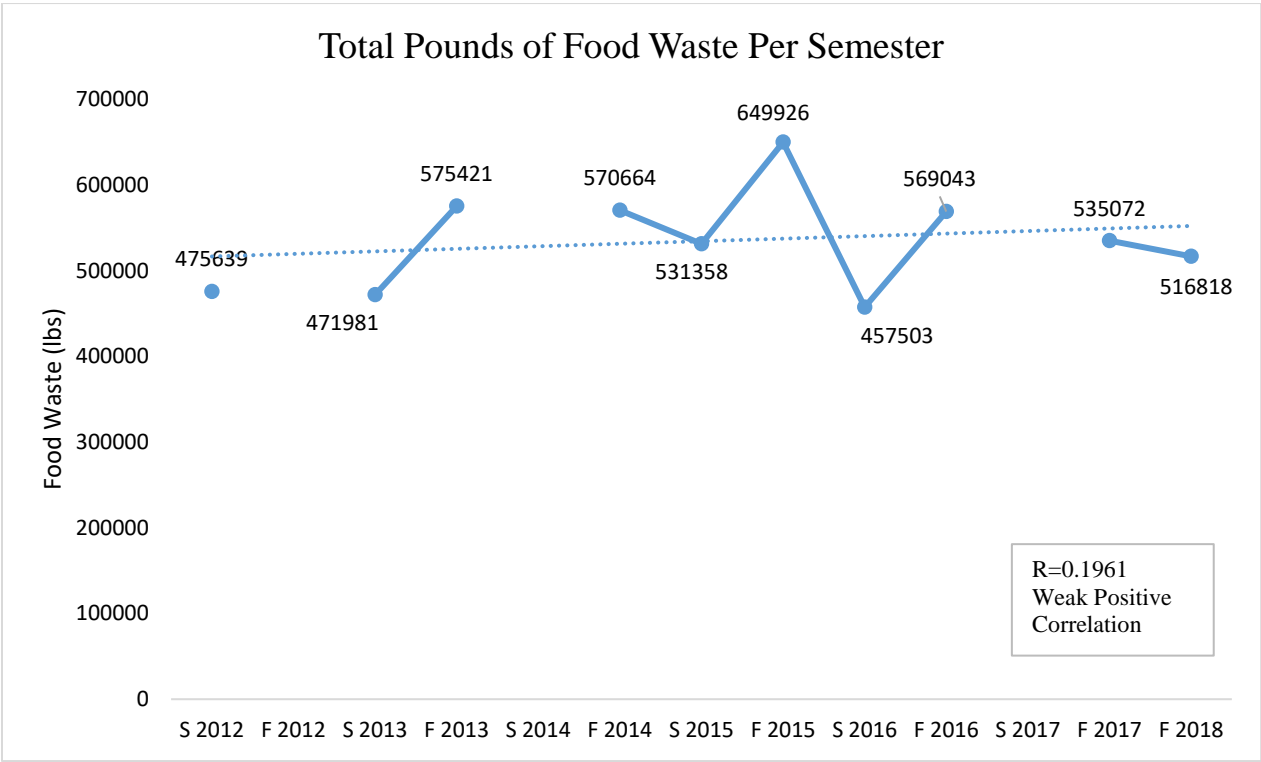


Figure 7: The graph shows an increasing trend in the number of pounds of post-consumer food waste.

Figure 8

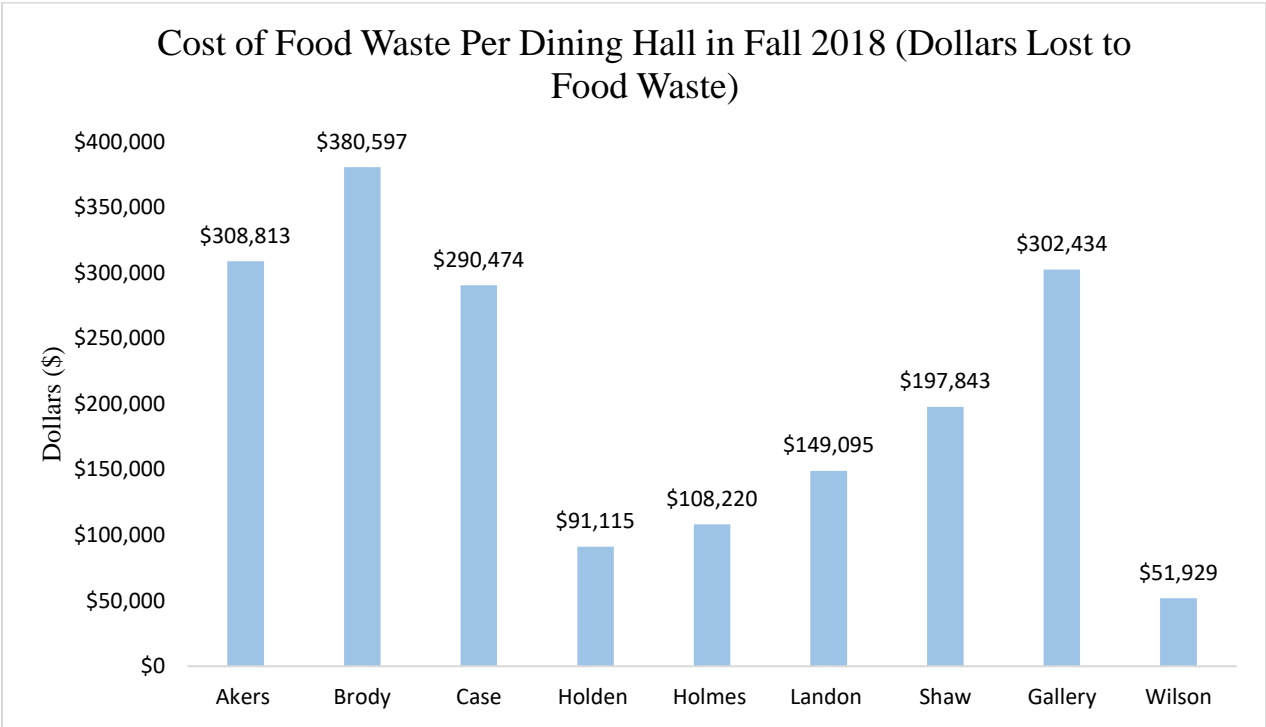


Figure 8: Brody lost the most amount of money due to food waste in fall 2018. The total number of dollars lost is \$1,880,519.08. Numbers are rounded to the nearest dollar.

Figure 9

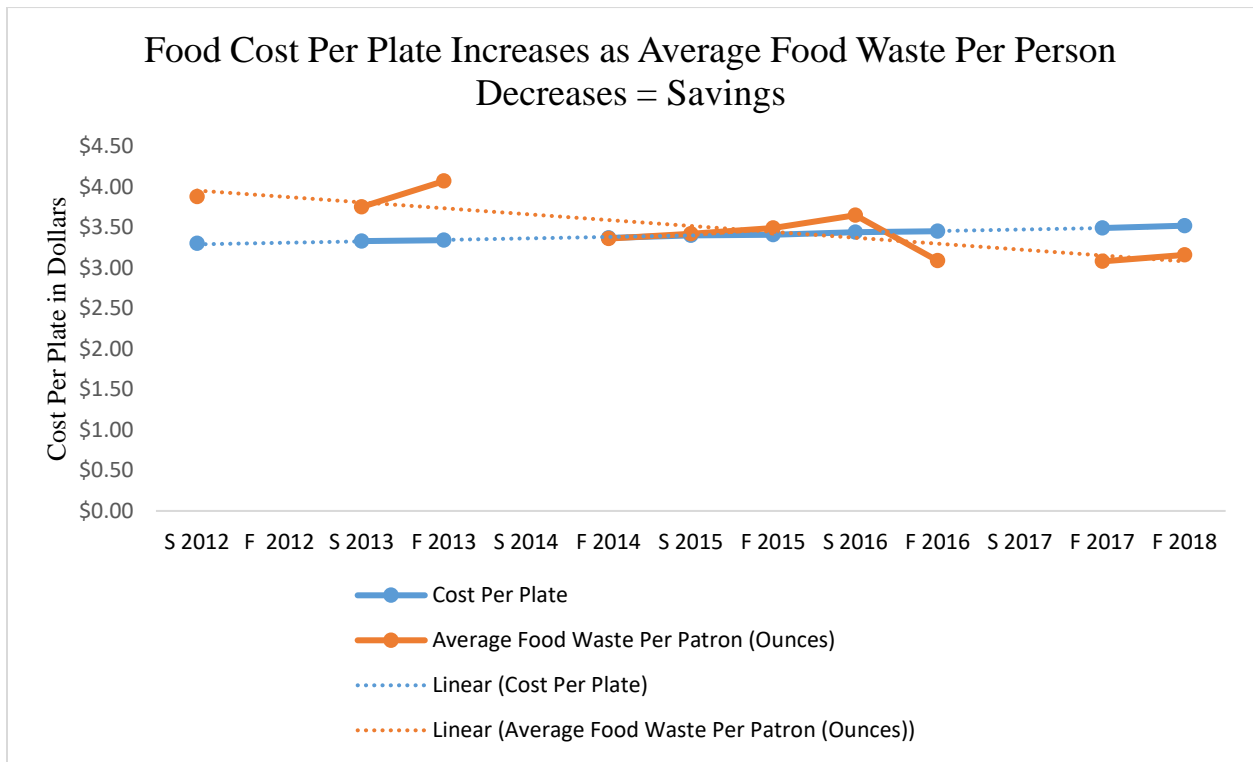


Figure 9 shows cost per plate and food cost overall is increasing even though food waste is decreasing. If food waste were not decreasing, then the cost per plate would be higher. The food cost per plate increases each year due to inflation of food prices, food services, and the increase of people eating in the dining halls.

Figure 10

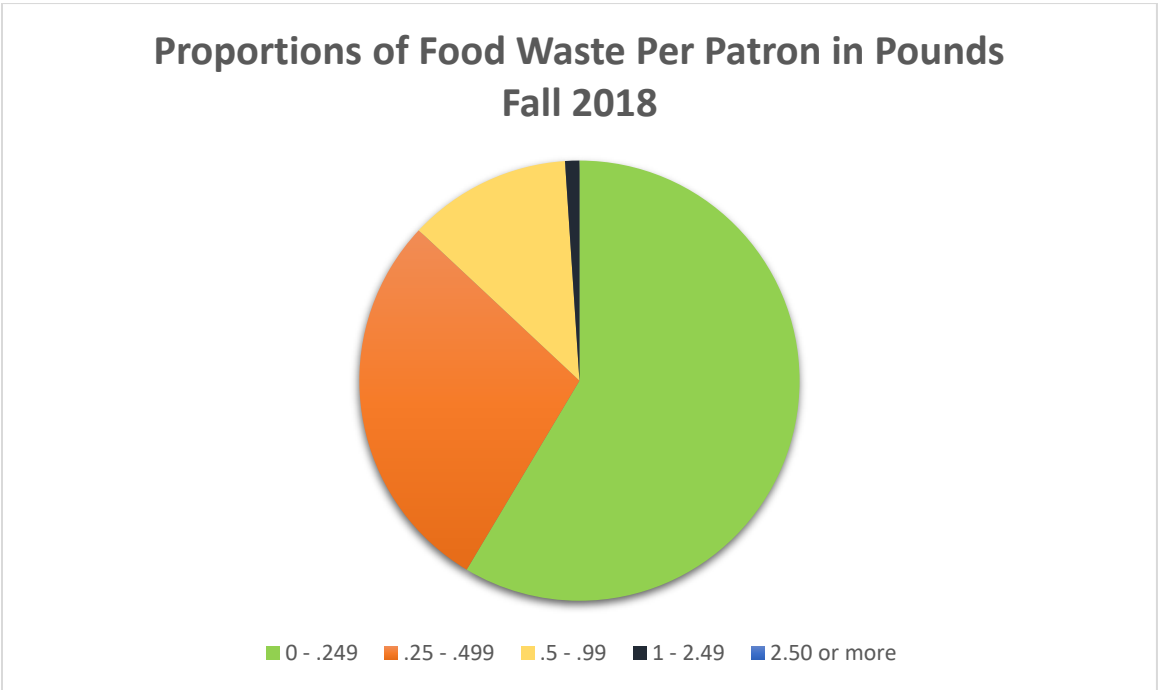


Figure 10 shows the division of patrons according to food wasted in pounds. 59% of the patrons wasted between 0 and .249 pounds of food.

school year is June 2017- July 2018 ( data in that timeframe)

Number	Project	Class or research Honors college	Hrs. dedicated	DATE move in	Instructor Email and phone	Student	Research Hall/Hours	MOA done?	School	NOTES
	Bess German					25				
RES hall initiative MSU Masters Student	Composting in Res hall possibility	Student Green Grant		4/7/2017 but did not start until 12 October 4/7/2017-continure 1 yet	Sandra Logan ept of Citizen-Scholars Programs, Dpet of Professor, Dpet of English	1			College of Arts and Letter	I'm the Director of the Citizen Scholars Program in the College of Arts and Letters ( <a href="http://citizenscholars.msu.edu/">http://citizenscholars.msu.edu/</a> ), and some of our students are applying for a Be Spartan Green grant to create a composting project in one of the dorms for the 2017-18 academic year. The project would involve 1 floor of the Residence Hall, and would provide composting bins for each room on the floor (~50). We're hoping to raise awareness about composting and increase the student commitment to good environmental practices. We are seeking a location that will accept our raw material (primarily food scraps). Anthony Boughton suggested that we contact you. Can you direct us toward someone who will accept raw material for composting? I've attached their proposal draft here for your information.
	Trayless paper	Masters				Carolina vargus				Master student to do a paper on food waste and trayless- Meet up to look at Lean path
						Jeffery Boyce 231-557-3623				Voive mail on sustainability project
										We have a student (Kyeesha Wilcox, cc'ed here) who is working with CRFS and the MI Farm to Institution Network this summer on understanding the landscape of college and university food service and purchasing. We would love for her to have the chance to see how the food service operations work on the MSU campus. Is there a time in the next few weeks that she and I could meet with you or someone from your office would be available for a brief tour and conversation? I know in the past MFIN groups have visited Brody, and that seems to have worked out well.
composting project Thesis Project/Paper	BSG grant proposal	MFIN	1	42927		Student tour			MFIN-MSU	
	Trayless Dining Impact Study	Masters Student	2	42931		Carolina Vargus	Gallery,2 (7/26/17)			Masters student doing a paper on Culinary tray less dining
							General 1.5 (7/21/17)			
Global Sustainability	Hubert Humphrey Fellow Center International Developemnt	research	1	43010		Reem Mikhail				Egyptian female professional, MA holder from the American University in Cairo and a current Fulbright visiting scholar at MSU under the Hubert Humphrey Fellowship. My area of research and interest is corporate social responsibility (CSR) and sustainability. I wrote my MA thesis on the integration between community and private sector through CSR in the framework on Egypt.
Jrn 200 Writing nad reporting news 1	Interview	class Journal Isim	1	43011		Griffin Stroin Bobby Tarrant Cassy Secinaro		2		working Clean plates
			1							Good after noon, what is MSU doing to improve recycling in dorms and make MSU a zero waste school
	Community sustainability	CSUS 429	2			Cale Carpenter Della Uekert				- Program Evaluation for Community Sustainability
		Supply chaing Mgy	1	43041						Food waste date for clean plates
ASMSU	Greener together			43041						
ISB 208		ISB 208		43048		Isabelle Yumping Wei Qing Lai Nicklaus Allerton				My name is Isabelle Yumping and I am sophomore at MSU. In my ISB 208 Lab we were assigned to construct a research project in order to learn more about the correlation between current environmental issues and the food industry. As a group, we are contemplating on conducting research on the amount of food that is wasted at the dining halls at MSU. I was wondering if there was any way in which we could collect and measure the amount of food that is wasted in the Brody dining hall during lunch time or dinner. We would not take any of the food out of the dining hall, of course. In short, is there any possibility that you would be willing to work with us on this research project? I completely understand if this is not something that can be done.
		ISB 208	0.5	43047						Food waste in holmes
		ISB 208 ?	0.5		via eat at state					Food wast in Case and Akers
		WRA		43158		Abigail Jane Reich Valerie Aten				Asking about Trayless Dining
		WRA 101	0.5	43157						Asking Food Waste at Dining Halls
		?	0.5	43158		Julia Zocharski				Research Paper on Food Waste
			0.5	43158		Ian Gappy				Writing a paper--> food waste
	Information brochures	WRA	0.5	43185	Dr. Barlett	Jordan Herskovitz		0.5		
										This project is for my ISB 208 Lab class. The only information we need is the amount of beef that has been purchased in the past three months (January-March). What we are doing with this information is comparing the amount of beef in a few different cafeterias here at MSU. We chose Case, Akers, and Shaw. The goal of this project is to focus on an environmental issue and the impact our school is making with this particular issue. We chose to focus on the environmental impacts of consuming the large quantity of beef many Americans do. After we compare the results of the different cafeterias here, we will create a way to educate our peers on the effects eating beef has on our environment with a particular focus on our peers at the cafeteria with the highest beef consumption based on our results. This would be in the form of something like a poster or video (we have not decided how exactly we would like to go about that part yet). We chose to specifically target beef consumption because even though the most environmentally friendly diet is that of a vegetarian, we recognize that it is not practical to try and convince so many people to become vegetarians. The cows beef comes from release methane, the most potent greenhouse gas, into the atmosphere. Our intention is not to tell people to never eat beef or meat again, but instead to encourage them to choose other meat options such as chicken or turkey that have less of an impact on our environment.
ISB 208		ISB 208	1	43193		Emma Isrels				My name is Lauryn Stasiak, I am a freshman at MSU and working on a group project in ISB 208L. Our project is based on comparing each dorm and how much they recycle. We contacted the MSU recycling center and they pointed us in your direction. If you have numbers or any other information about the amount recycled weekly for each dorm, we would really appreciate it!
ISB 208		ISB 208	0.5	43199		Luryn Stakiak				
	Research project	MC 112; James Madison College		65114	Ahquiet	David Morse				
600 students @ Case	Sustainability Lunch at Case	HNF project	8	43207	Coordinated with Robin Grieb	Elizabeth Lytle and Woodrow Campbell				
		ISB		43209		Simone Bryant	248-497-7407			Is there a way you could estimate the impact of this decision? How much would this increase the trash for RHS? For example (just making it up) - If they normally do 100 events a year with an average head count of 75 people with a set of disposables weighing 1 lb.; their decision with increase waste by 7,500 lbs!
Clean plates				50						



Environmental & Organismal Biology

2 371916

Kayla Ewald, John Farrell, Anthony Miller and Brendan Witt

New connections: (from "Our Table," America Food Waste Discussion)

John Tull	Fox College sports
Dr. Katlaina Bartlett	Speaker for Fall US Composting council
Amy Freeman	
	fellow associate Professor, Supply chain Mgt.
Dr. Sriram Narayanan	

Student Organic Farm Tours

Total Est. #	Est. MSU student #	Est. MSU VIPP	4H tours	Tours 2018
640	293	52	31	TOTALS
1	0			Jan 12 – DCF tour with donor (Wayne Jones?)
35	35			Jan 24 – DCF German 302 – 2 tours (9 – 10am and 10 – 11am) Probably 30+ students
25	25			March 15 – John Biernbaum leading a class tour at the farm
12	0			April 17 – KB 4H Tour (Free)
25	25			April 18 – DCF – CSS 124 (Julie Cotton) Tour
25	25			April 25 – Julie Cotton Class tour
5	3			April 26 – DCF – Tour for IPF & GVSU
10		10		April 27 – KB tour with Nigerian professors
				May 1 – Tour NCLC conference (20 minutes) not sure what this means
10		10		May 2 – KB Tour with Nigerian professors
16			16	May 10 – KB & SG - 4H World Food Prize Tour + Work Task (ripping H1 beds) ~12 students + ~4 staff
5				May 10 & May 17 – CSA member tours @ 4:30 and 5:30pm
20				May 18 – Permaculture Environmental Leadership Experience tour – Florida Students + Staff & Students from college in S. Michigan - ~20 people total
				May 29 – DCF tour – Emily Griswold & kids
				May 30 – Hospitality Biz Tour
0				June 16 – KB Free tour (no show)
15				July 10 – Curiosity Campers
15			15	July 12 – Lowell Jr Master Gardeners
				July 22 – SG – Free tour
				July 27 – KB tour Wei Liao
15				Aug 8 – CJ – Tour with Stepping Stones Montessori
10		10		Aug 8 – KB tour with Chinese Professors
1				Aug 9 – Tour with Christine Quane from Eastern Market KB
2				Aug 18 – Abby – Free tour
10		10		Aug 21 – KB tour with VIPP Chinese Professors
35				Aug 28 – Tour with ~30 students & 3 staff from Drew School in Detroit + 2 CRFS Staff
12			12	Sep 20 – Tour with Bosnian farm researchers
20	20			Sep 24 – Tour for MSU Class (H Veit)
30	30			Sep 26 – KB + Jamie - Tour with Rich Alde Class – 30 students
60	60			Sep 26 – Tour with Julie Cotton class (60 students)
30	30			Sep 27 – Tour with Gabe Ording class 30 students
20	20			Oct 4 – Jamie - Kristin Getter Tour
20	20			Oct 17 – Jamie or Lowe lead tour of Susan Grueber CSS 192
150				Oct 30 – DS – Tour with LCC environmental students (emailed to ask how many total students)
				Nov 30 – Society for Hospitality Food Service Management
2				Dec 12 – KB tour with Erin Caudel & New Mexico hoophouse researchers – 2 people
4				Dec 18 – KB tour with Tamarack camp staff – 4 people

# Quick Stats for CPAS

- In the fall semester of 2018, we had 162,793 less swipes and a higher average oz wasted per patron than in the fall semester of 2017
- Approximately 516,818 pounds of food was wasted in the fall 2018 semester (vs last year's 535,072)
- Food waste is higher than dinner at 5 of the 8 dining halls (Holden, Holmes, Gallery, Landon, and Akers)
- Gallery had the highest average food waste per patron in one day (3.81 ounces)
- 26% of patrons had zero waste
- In 2018 fall semester, the average ounces wasted per person in one day: 3.16 ounces (versus last year's 3.08 ounces)
- In 2012, the average amount of food waste in a semester was 25.22 pounds and in 2018 it dropped to 20.54 pounds (significant decreasing trend)
- 18.9% of fall 2018 food budget is food waste, a 1.5% from last year
- We lost about \$1,880,519 of the fall 2018 food budget due to post consumer food waste

