2011 ON vs. OFF CAMPUS ACTION RESEARCH TEAM

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Executive Summary

Our first objective was to build and administer a specific survey to extend to our peers; we aimed to attain the utility (electric/gas) bills for multiple months of a statistically significant sample size of off-campus UCLA students, while concurrently utilizing stakeholders to attain energy data for on- campus undergraduate living scenarios. Our next objective included compiling, normalizing, and analyzing the gathered data to compare carbon footprints (transportation, electricity, and basic waste components) of both on-campus and off-campus students. Our final objective was to generate conclusions and recommendations based on the analyzed data from our survey.

Existing research including the UCLA Climate Action Plan (2007) and Student Master Housing Plan (2007) should benefit from a well-defined carbon footprint-based comparison between students living on- and off-campus. Current and planned housing developments on 'the Hill' intend to incorporate thousands of additional beds to accommodate increasing freshman and out-of-state admissions through 2020. The office of Housing and Hospitality Services Sustainability can incorporate the fulfilled objectives when deciding upon best management practices for current and future housing initiatives. Future action research teams will build upon our survey to increase confidence in results found and to simultaneously track student emissions.

By normalizing results using an environmental awareness and altruism index against students living on- and off-campus for minimum bias, we found that students living on campus have a slightly greater environmental awareness, and that the closer students live to campus, the more likely they are to walk. Also, students paying for utilities had a positive correlation with efficient behaviors including turning off appliances, recycling, and low-impact travel. We

strongly recommend further promotion of low-impact living behaviors.

Overview

This project incorporated data enabling a comparison between the carbon footprints of UCLA students living on-campus to those living off-campus; we compared metrics of energy, transportation, and waste. To do this, we administered a survey from which we will learn the energy, transportation, and waste behaviors of students living in dorms, university apartments, and non-university apartments in Westwood. We compared students of similar environmental consciousness, based on altruism and environmental awareness indices to try and learn how living on or off campus affects their behaviors at home.

Energy metrics included the type of energy used, and the amount spent per month for at least one specific month. Transportation metrics included mode of transport, distance of transport, and carpooling behavior. Waste measures are more qualitative, as we explore the degrees of implementation of recycling and composting practices. We aim to herein deliver the office of UCLA Housing and Hospitality Services with several survey-based recommendations, which may be valuable to sustainability initiatives to take place in the new student housing projects that are planned and in progress.

Our research compared carbon footprints of UCLA students that live on campus to those that live off campus through the implementation of a survey. Our group was split into two subgroups; one subgroup composed the survey while the other group focused on gathering building information and energy indexes to supplement the results collected from the survey in order to formulate recommendations for the office of UCLA Housing and Hospitality Services. In regards to the survey, we intended to create a concise survey that would tackle energy, transportation, and waste elements. Though we collectively decided not to focus our efforts on

comparing waste, asking qualitative questions as to whether students recycle or compost was essential to our research because it gives insight into student's personal consumption habits.

We asked students who have control over their energy usage to supply their energy (electricity *and* gas) bills from the previous three-month months (January to March 2011) (on campus respondents only) and answer quantitative questions based off of their bills. In order to balance the responses for students who do not have knowledge of their energy usage, such as those that live on the hill, we aimed to contrast how much the average building and room consumes. For transportation, we also included questions regarding the year, make, and model of student-owned cars as well as how many miles the student drives per week (a distinction was made between school related travel and non-school related travel). Furthermore, we examined several different carbon footprint calculators on other websites to get a sense of what types of individualized questions we could include in our survey.

The building research group focused on gathering building data to supplement our survey. They contacted several apartment complexes in the North of Wilshire area and found buildings that are comparable to the different buildings in the dorms. In order to get the most precise measure of living on campus, we decided to compare all different types dorms and find apartment buildings that compare well. The building group researched building elements including the year the building was constructed, what types of facilities the building offers, as well as the scale of the buildings in terms of individual units and number of tenants.

Furthermore, this group attempted to access the records of the total building energy consumed over the three-month period by off campus buildings, as well as obtain how much energy was consumed by individual buildings on the hill. Through this research, we hoped to compare the individual student consumption habits to the overall building energy usages to

enable a more standardized comparison.

Initial Conditions

One of the initial challenges our team encountered was how to define our project. Measuring "sustainability" for on- and off-campus housing is a not necessarily a simple, or specific topic. The first quarter required us to define our project, decide what direction we wanted to go in, and what factors of a carbon footprint we wanted to quantify. It took us the better part of the first quarter to make a functional definition for this that would yield some useful results for our report. We narrowed the scope of our survey and data collection by 'eliminating' the category of waste, and choosing to focus on energy and transportation. We also maximized our resources as a team by splitting into two groups: one that focused on creating and distributing the survey, and the other that focused on data collection for buildings both on- and off-campus. The main tasks for the second quarter were to disperse the survey after refinement and subsequently collect and analyze the data.

Another challenged we faced specific to our survey was finding a balance between what types of information people could (would) provide us and what we wanted to know. While we would ideally implement a comprehensive survey of all habits and energy usage of our participants, it would have been very difficult to get this information from students. Splitting up the team between survey and building data collection helped remedy this. Wording specific questions that gauge interest in environmental efforts in an accurate way (so that we could report the results to our stakeholders with confidence) was another obstacle we faced. Finally, we were challenged by the potential for bias that arose when we shifted our survey sample focus to mainly ART members. We solved this problem of potential bias by including a series of

questions that produced an altruism and environmental awareness index at the end of our survey.

The main changes we made throughout the two quarters involved narrowing the scope of our survey as well as changing the manner in which we publicized our survey. Originally, we wanted to create a more comprehensive survey that was modeled after online carbon footprint surveys. When we drafted our original survey, it included questions about food purchasing and other 'offbeat' footprint aspects in addition to transportation, electricity, and basic waste. However, stakeholder involvement helped us to see that attempting to measure such a scope of topics would be too difficult and time-consuming, and that it would better to focus on obtaining more specific data on fewer aspects of a carbon footprint.

In terms of changing our publicity strategy, we originally had planned on holding an event in Bruin Plaza as well as the Earth Day Fair. At these events we planned to provide paper copies of the survey and also offer incentives to survey respondents. We planned on building a large wheel that was suspended by a pole and could be spun. The wheel would be divided into sections and when spun would land on a random prize. We later decided that an electronically administered survey would aid in not only enabling more people to access the survey, but also make data collection more efficient (Qualtrics helped create useful graphs and charts of data). This also resulted in minimal money for incentives as utilized through DART funding.

Over the course of the last quarter, our goals have changed mainly by becoming narrower in scope. At first, we tried to incorporate more factors of a footprint than were helpful to our research. We arrived at focusing on energy use and transportation factors including a few aspects of waste. Also, our goals of surveying a large sample size (as many as possible at large functions) representative of all types of on- and off-campus housing grew more focused; we aimed to for a sample size of $n = 60$ students, where half would represent on campus and the

other half would represent a random mix of off campus living situations (excluding Greek). This turned out to be better for us as an action research team because we will be effective in our survey efforts and produce information that is valuable to our stakeholders. We utilized DART funding for survey participant incentives as well as tabling materials to spread awareness. By narrowing our focus, we were scheduled for a successful action research project in terms of meaning and relevance to campus sustainability.

At the end of Spring Quarter we planned to accomplish the following four main goals: administer our survey to our ART Peers; attain the electric/gas bills for ~three months of 30 off-campus UCLA students, utilize the resources of our stakeholders to attain energy data for on campus residents, compile the data we have gathered to compare the transportation, electricity, and basic waste of both on-campus and off-campus students, and then make recommendations based on our data.

Research Methodology

After we had completed our survey we began administering it through several outlets. We decided that each member of our group would be responsible for collecting 6 on-campus and 6 off-campus survey responses. This would guarantee us 60 total responses - 30 from each category. This would be achieved by contacting friends through email, phone, and in-person. The survey link was also sent out through the ART listserv. After sending the link to our stakeholders, the link was forwarded to the Team Green listserv, on-campus resident leaders, and other friends/faculty involved in sustainability.

Shortly after creating the survey we also created a Facebook event to which all group members were made "administrators," allowing our UCLA Facebook friends to the survey. After

inviting all of our Facebook friends listed under the UCLA Network, we each created a status update with the event link that would show up on our Facebook friends' home pages. In the event page we wrote a short blurb explaining the purpose of the survey and how student participation would aid UCLA in becoming a more sustainable campus.

Additionally, there was a survey link on this page as well as a description of incentives to encourage students to participate. To encourage student participation, we decided to offer incentives as prizes. Each of the 30 off-campus students who participated in our survey and supplied utility information would receive a $10 ASUCLA gift card. This was offered to help outweigh hesitancy students might have had in collecting their gas and electricity bill information. For on-campus respondents as well as any other off-campus respondents that provided bill information, we raffled (1) $25 ASUCLA gift card, (1) $10 ASUCLA gift cards, aluminum water bottles, and reusable canvas bags. This incentive information appeared additionally at the beginning of the survey to encourage students to complete it.

Results and Recommendations – *Energy Metrics*

This survey asks questions specific to energy usage. It asks students living off campus to provide details about how much they pay on a monthly basis for electricity and gas. It then asks students about the appliances they have in their apartment. The energy section concludes with questions about behavior; namely, if students think paying gas and electricity bills directly affects how much they use, and if their roommates help or hinder energy conservation behaviors.

The survey attempts to understand students and their behaviors as consumers of gas and electricity. It also gauges whether paying for electricity and gas had an effect on how much they used. The questions pertaining to roommates were a way to determine if students were aware of their behavior, and if they are actively trying to make changes to become more sustainable.

The building group also approached the managers of two different buildings. They are both owned by the RW Selby Group, who operates five different apartment complexes in the North Westwood Village area. Questions included information about the building, the number of apartments and residents, and attempted to obtain data on gas and electricity usage for each building (see Appendix 1). We asked these questions to try and get a sense of what the data would look like in aggregate, i.e. total electricity usage for a building. Unfortunately, the building managers did not have access to this data, since each apartment pays its gas and electricity bills individually. Therefore, it is up to the individuals to decide how much they want to use in relations to how much they pay. For example, each apartment has its own heat and air conditions, which it controls. Students must make the personal tradeoff between temperature and cost. One interesting observation is that both buildings charge a $15-per-month fee for water and garbage. Most likely, students are aware of how much gas and electricity they use, but not much water they use or how much waste they create.

There were a few technical difficulties with the survey questions on gas and electricity usage. The survey is formatted to ask about electricity usage on a monthly basis. However, most students receive their electricity bill bimonthly. The ART group received a few inquiries on how students completing the survey should handle these questions. If repeated, the survey should be reformatted to capture more accurate results. Also, students living off campus were asked to input numbers for total electricity or gas used, and total cost. Even though 22 students living off campus relied to the survey, only 17 of the results were usable, with the others being an 'x' or a '0.' The next survey should ensure number inputs are valid by imposing a numerical range.

The energy section focuses on off-campus students, since it asks for specific numbers on bills that on campus students do not receive. However, there are some exceptions. The survey

results found that for students living off campus, paying bills only affected their usage somewhat (see Figure 1).

Figure 1:

Q#37. Does having to pay your utility bills separately from your rent influence your use of utilities (as it changes based on actual electricity/gas/water use)?
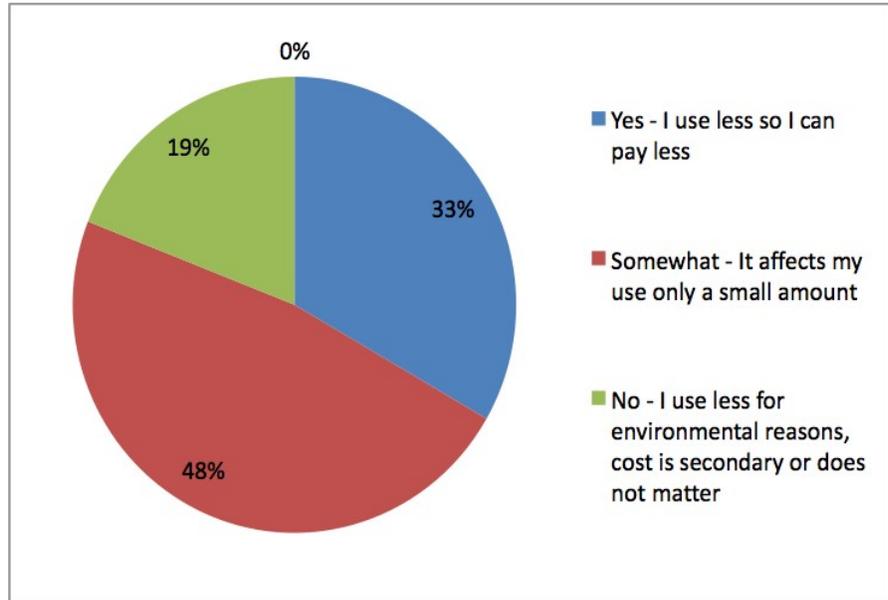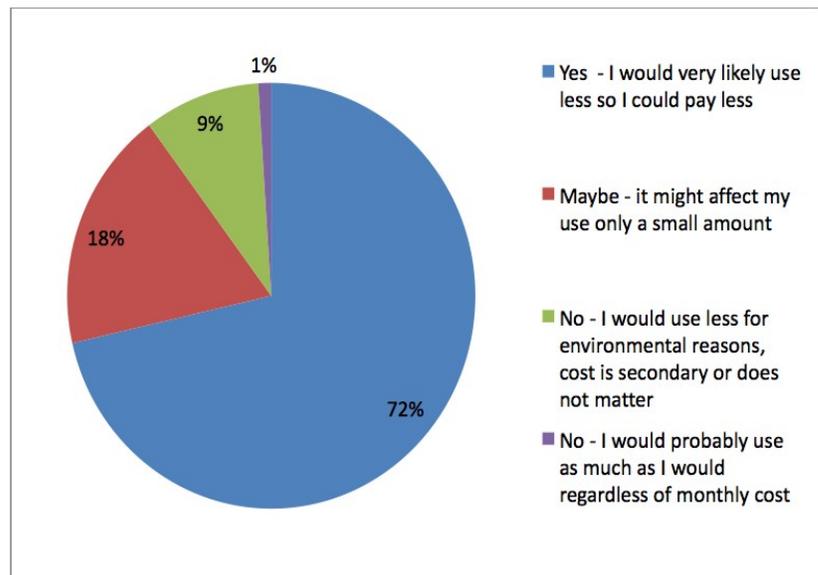

However, for students living on campus, they perceived

that paying bills separately would make them "very likely to use less so I could pay less." These

results show that student-consumers do change their behavior when paying directly for energy, but perhaps not as much as perceived.

Figure 2:

*Q#38. Would having to pay your utility bills separately from your*

rent / housing fees influence your use of utilities? (so that it reflected actual electricity / gas / water use)

Another set of questions pertaining to both groups is #41 and #42. These questions inquired further about students and their roommates. About half of the students said that they did not disagree with their roommates about energy (see Figure 3).

Figure 3:

Q#41. Do you and your roommates ever disagree on matters dealing with energy usage in your home such as leaving appliances/lights on, using heating/air conditioning?
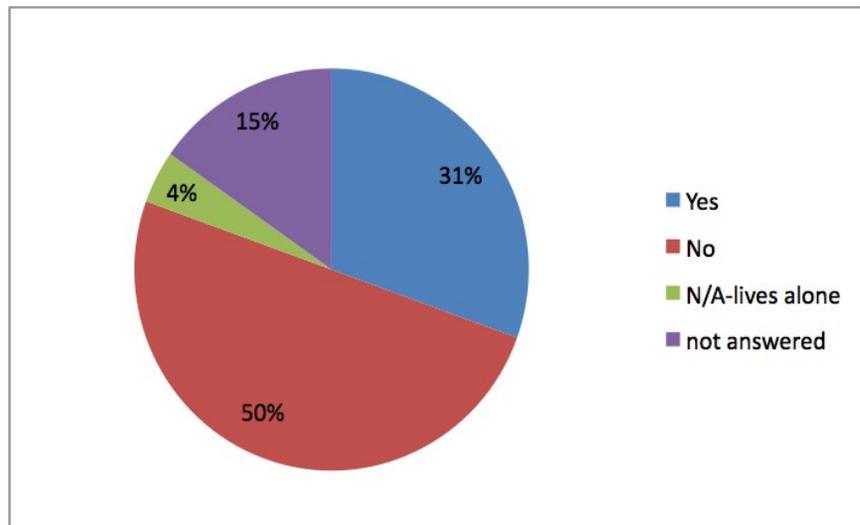
Anecdotally, however, a few said that they did not discuss the issue with their roommates, yet still had problems that needed to be addressed. Also, some students mentioned that both they and their roommates often forgot to turn off lights when leaving a room; while both parties wanted to conserve energy, neither party was proactively holding the other accountable. Finally, Question 42 asked: "Please describe any behaviors you and your roommates use to conserve electricity use, reduce landfill waste, or reduce transportation impact while going to UCLA." When coded, the majority of these answers consist of turning off lights or unplugging appliances, recycling, and using methods of transportation alternative to a car (see Figure 4, next). Some students mentioned that they attempt to conserve energy, but their roommates do not make the same effort.

Figure 4:

Q#42. Please describe any behaviors you and your roommates use to conserve electricity use, reduce landfill waste, or reduce transportation impact while going to UCLA.
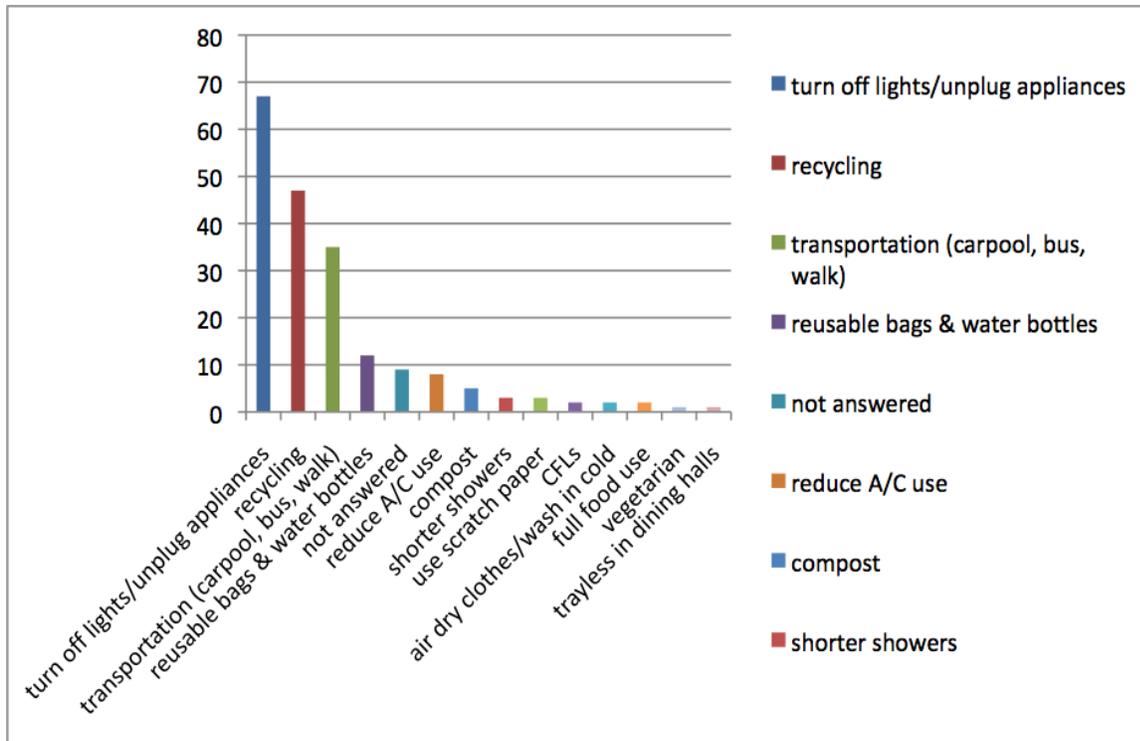
From the standpoint of students as consumers, a few salient recommendations can be made. First, students living both on and off campus should be made aware of the lesser-known conservation behaviors, such as using Compact Fluorescent light bulbs and composting. The second recommendation pertains to the building managers. They should be made aware of aggregate data, and start conservation programs in privately owned apartment complexes. This would save both the building and the individual student money in the long-term. Finally, students should be made fully aware of all the energy they consume. For example, a very high number did not know of their air condition and heater run on gas or electricity. Since the price is very

different for these types of energy, it would probably help determine usage frequency if students knew. This is most likely also true for water because very few students pay for it separately, but the survey provides less data on this aspect. An important issue throughout this section of the survey is making students aware of how much energy they consume.

Results and Recommendations – *Transportation Metrics*

In regards to the Climate Action Plan (CAP), the transportation initiatives that the campus intended to adopt focused primarily on vehicles utilized by the school as well as reducing single occupant commuters (CAP, 8). Almost one third of the undergraduate and graduate student populations live on campus, which reduces the amount of daily commuting usage (CAP, 18). In addition, more than 7,500 students drive to campus by themselves and approximately 1,500 carpool out of the 20,000 commuting students (CAP, 18). While transportation is a sustainability topic the school desires to tackle, the housing and residential life initiatives, as outlined in CAP, do not focus on student transportation specifically. Instead, the focus was to modify personal behavior in a broader aspect through energy use, recycling, and waste management contained on the hill (CAP, 50).

One goal of ours was to address a broader aspect of transportation for all undergraduate students living on and off campus. We wanted to get a general idea of how people regarded transportation to campus as well as throughout the general Los Angeles area rather than measuring their flight mileage or specific miles traveled by bus or train. While most of the questions did not go into that great of a detail, it gave us insight into what modes of transportation students preferred to use based on what their living situation. For example, one survey question asked the student to rank the mode of transportation they commonly used to get onto campus while another question asked to rank the mode of transportation commonly used to

travel other than going to school. These two questions allowed us to gauge how common a certain vehicle (type) was used based on the destination purpose, on campus or off campus, as well as the respondent's living situation. It was important to determine their preferences based on their needs, showing that their utilization of transportation was influenced on location and accessibility rather than specific building types such as residence hall versus a private (multi-family) apartment complex.

Another transportation survey question included the wording "majority of the time" and respondents were given the option of answering multiple answers. This thereby altered what their main mode of transportation was, adding an additional number of responses for each category and skewing the percentages. Walking still ranked the highest at 55%, but both car and public transportation appeared equally matched at 41% and 43% respectively. However, ranking the modes of use showed that 56% of the survey takers stated walking/skateboarding was the preferred mode of transportation outside of school, ranking it 1 out of the 5 choices given. Car was second with 21%, and carpooling was the highest ranked at 37%. With the automobile categories (personal vehicle and carpool) combined, results show vehicles were favored compared to public transportation or walking bicycling.

Walking proved to be the most preferred choice of transportation for getting on campus compared to other forms of transportation. For on campus residents, 95% choose to walk or skateboard to campus. Also, the majority of off campus residents (73%) choose to walk or skateboard to campus. However, when traveling off campus to run errands off campus residents and on campus residents differed. For on campus residents, walking and or skateboarding proved to be the more preferred method of transportation outside of campus. Public transportation was second highest in rank with nearly 25% of the responses. For off campus respondents on the

other hand, driving or carpooling showed to be preferred more than walking or public transportation. Almost 62% of the off campus people we surveyed stated that they preferred using a car to travel unrelated to school.

Carpooling and public transportation were ranked very similarly, only differing by one response respectively for off campus residents. The graphs coincided with our expectations of the outcomes. We had a general understanding that people who lived off campus had a higher access to cars than people living on campus so it is natural that they would rank it higher as a preferred mode of transportation. Also, since our goal was to focus on residents living north of Wilshire, it is understandable that walking proved to be the highest preferred mode of transportation for getting on and off campus simply because of the accessibility of location. The closer people lived to campus, the more they choose to walk or skateboard instead of driving there. Moreover, it does not come as a surprise that if on campus residents did not have a means to walk to wherever they were going they would choose to take public transportation or carpool.

In terms of public transportation and carpooling, what was interesting was how on campus residents ranked carpooling, public transportation, or driving very similarly when we asked them to rank the modes of transportation. Another important not was that the amount of responses on campus people had when putting down the year, make, and model number of the car they used to drive to run errands and local trips – this is important because nearly 43% of the on campus respondents filled out their car information. This was interesting because we had not expected such a percentage of on campus respondents to own cars. Granted, some of the mixed responses marked some confusion in the question where some vehicle information could be personal cars that students have at home rather than a car they currently have on campus.

Results and Recommendations – *Waste Metrics*

Waste was another dimension of housing we decided to attempt to quantify. Waste is an important component of carbon footprint because waste that is incinerated releases carbon emissions and waste sitting in a landfill takes up valuable land space. Recycling reduces the amount of waste produced as new materials can be created from recycled materials. It was difficult to quantify and compare the wastes generated by students living on-campus versus students living off-campus. Our waste questions were substantially narrowed to mainly ask about recycling and composting behavior, how composting behavior would change if bins were provided within the residences, and the types of utilities for which students decidedly pay for.

Recycling behavior among on-campus and off-campus students was very high. When asked if they actively recycled, 96% of on-campus and off-campus students responded that they 'recycled everything' or 'recycled consistently'. Within the off-campus students, all the students who had recycling bins in their residences 'recycled consistently' or 'recycled everything'. Among the off-campus students who did not have recycling bins in their residences, 80% still at least 'recycled consistently'. The average altruism index for students who 'recycled everything' was 54, just above total altruism average of 53.3, showing that these students had slightly more environmental awareness and/or altruistic tendencies.

Composting behavior was minimal among students living on and off-campus, possibly because composting requires more general knowledge from an average individual's standpoint. Only 4 out of 25 students living off-campus had composting bins in their residences, and 3 of those students composted their waste. When off-campus students were asked if they would 'compost if bins were provided at their residences,' 55% of those who 'currently do not compost'

responded that they would. Providing infrastructure and increasing convenience might alter this willingness and lower the barriers of inaction. The average altruism index for the three students who do 'currently compost' was 54.3. Comparatively, the average index for students who are 'likely to compost if the bins were provided' was 54.8, versus 52.4 for students who are 'unlikely to compost even if bins were provided' (Table 1). Students who were 'unlikely to compost even after bins are provided' did have less of a pro-environmental attitude than average.

Table 1: *Average Altruism Index by Waste indicators*

Average Altruism Index for Waste Indicators	
Currently compost	54.3
Likely to compost if bins provided	54.8
Recycled everything	54
Pay waste bills	53.5

We were also interested in whether paying for certain utility services affected behaviors at home. We found that all the students who paid for the various utility services had average altruism indices of at least 53.3; all students who paid for at least one utility service had more pro-environmental attitudes than average (Table 2).

Table 2: *Average Altruism Index by Utility Paid*

Average Altruism Index for Utilities Paid	
Internet	54.9
Electricity	54.1
Gas	53.8
Waste	53.5
Water	53.3

Surprisingly, students who paid for Internet had the highest average altruism index, and we have no explanation for this other than that these students might have a greater base of knowledge (or at least access).

Even though only four off-campus students paid for waste services separately from rent, it is promising that such high recycling rates are seen among UCLA students. Between on and off-campus students, on-campus students had higher average altruism indices for students who 'recycled everything' (figure 5), 'currently compost' (figure 6), and 'likely to compost if bins were provided' (figure 7).

Figure 5:

Figure 6:

Altruism Index: On vs Off-campus students who actively recycle everything

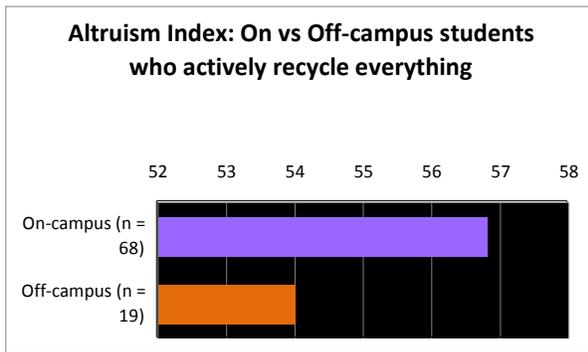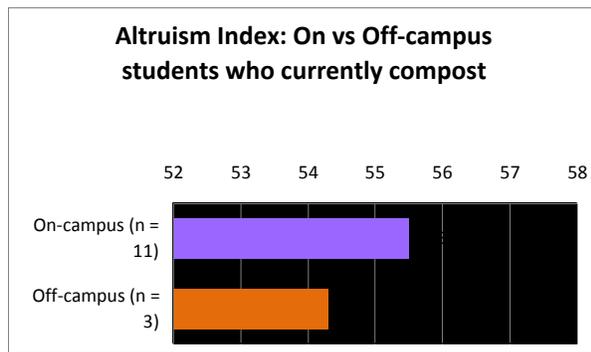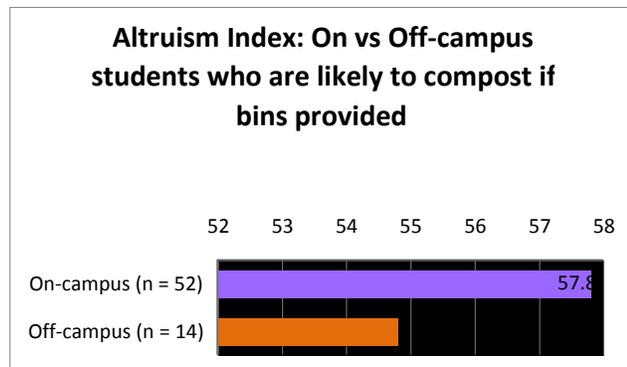**Altruism Index: On vs Off-campus students who currently compost**

These higher altruism indices do not necessarily mean that on-campus students have smaller carbon footprints because of our limited sample size. There were only 25 off-campus students who participated, as compared to the 93 on-campus students. Our 25 off-campus student sample cannot speak on behalf of the entire off-campus student population.

Figure 7:

Altruism Index: On vs Off-campus students who are likely to compost if bins provided

One possible waste-related recommendation is that there could be designated compost bins throughout the dorm areas and on-campus. The next step should include narrowing the discrepancy between being 'likely to compost if bins were provided' and 'currently not composting'. We want to remove the barriers for the students who are positively inclined to compost by making it easy for them to act on their pre-existing inclinations. Second,

there could be a composting education workshop instituted through Housing and Hospitality Services, Office for Residential Life, or even an environmental club on campus. It would be useful to identify why students don't compost; is it because of the perceived difficulty in maintenance, people don't know about the benefits of composting, or because they don't know from where to get their supplies? It is likely that there is both an education and action gap; we need to develop strategies to narrow both gaps.

Lastly, there can be an education and awareness campaign promoting the other two R's: reduce and reuse. Students have high recycling rates already, so the next steps would be to get students to reduce the use of certain products such as used paper, plastic water bottles (anti-plastic water bottle and plastic bag campaigns), and broaden the spectrum of current reusable options. When most products get recycled, they are down-cycled. Greater reducing and reusing is the way to truly shrink the waste stream and decrease a carbon footprint from an individual perspective to that of an institution like UCLA.

Recommendations to future On vs. Off Campus Action Research Teams

After two quarters of trial and error, we have several suggestions for future groups that will continue to research housing initiatives. The first major suggestion we have is begin with the survey that we have created this year at the very start of next year's ART term. Since we have defined how to tackle the idea of evaluating on and off-campus footprints, utilizing the 2011 survey and refining it may generate a more accurate carbon footprint, and/or be more user-friendly. By beginning to adjust the survey early, a new group will also be able collect a larger sample size, reducing sampling size bias.

Another limitation our group encountered was obtaining information for a variety of

apartment building companies. We focused our efforts on R.W. Selby, a company that owns several apartment complexes throughout Westwood, both north and south of Wilshire Boulevard. We purposely limited our research in this area because as the first On vs. Off Campus team we tried to create the most focused and thorough results instead of spreading our efforts over too many outlets. For future groups we recommend investigating information on a larger variety of complexes to gain a more comprehensive search of Westwood apartments.

A few times throughout the two quarters there were instances when some of our group would be working on the project and the other members would less to work on. For example, as some of our members were creating the survey, had the entire group been participating it would have been too complicated, creating a "too many hand in the cookie jar" type of situation and therefore a survey that lacked direction. However, at this time what we should have done is have other members look forward; we could have concurrently planned the implementation of the survey and created a plan for incentives – this would have made progress significantly more efficient. Lastly, an important point is to keep an open mind and be flexible. Approaching the project with an open mind is key to getting the most out of it, as the project itself has a capacity to change dynamically throughout the process.

Conclusion

By normalizing results using an environmental awareness and altruism index against students living on- and off-campus for minimum bias, we found that students living on campus have a slightly greater environmental awareness, the closer students live to campus, the more likely they are to walk. Also, students paying for utilities had a positive correlation with efficient behaviors including turning off appliances, recycling, and low-impact travel.

It seems that the most significant factors that affect an undergraduate's carbon footprint include not only the setting in which they dwell but also with the behaviors, attitudes, and degree of access to knowledge. Behaviors that can change with awareness including composting and turning off lights/HVAC/other appliances currently have substantial room to improve upon in terms of all students, especially those living off campus. Moreover, students living off campus reflected a positive attitude towards reducing costs and attempt to do so by minimizing utility use.

Similarly, if students living on campus are given the opportunity to pay for their utilities based upon their (traceable) usage in the future, they may have potential to pay less than at present, and subsequently reduce UCLA's carbon footprint per student. The positive effect of increased access to knowledge of a given student (ex. an off-campus student paying for Internet) is amplified by educational initiatives driven to increase environmental awareness. Consistent dispersal of the survey produced (see Appendix 2) may ultimately result in significant decreases of undergraduate and graduate student emissions associated with housing as discussed in the Climate Action Plan and Student Housing Master Plan.

References

UCLA Climate Action Plan, 2007

UCLA Student Housing Master Plan, 2007-2017

Environmental Awareness and Altruism Index Calculator

    <http://www.prenhall.com/divisions/hss/app/social/addchap9.html>

Qualtrics Survey Software and Analytics

    <http://www.qualtrics.com/>

Appendix 1- Building Data

Atrium Court

-Year built: 1990

-# of apartments: 69 units

-composition of apartments: 54 2 bedroom/2 bathroom, 15 1 bedroom/1bathroom

-# of residents per building: 225 residents

-square footage: 56,725 total; average 850-950 square feet for the 2 bed, 650-725 for the 1 bed

-type of heating and cooling system: each apartment has central air and heat

-monthly water, gas and electricity usage: $15 per person per month for water and garbage; $5

for the gas to heat the water, which is included in the monthly water and garbage bill

-trash system: no composting, communal recycling bins next to the dumpster, but no recycling

bins in individual apartments

-parking: 97 spaces, 91 used

-elevators: 2

Midvale Plaza I & II (owned as a single property)

-Year built: 1985-1986

-# of apartments: 166 total; 60 in I, 106 in II

-composition of apartments: 24 studies, 32 1 bed, 110 2 bed

-# of residents per building: 450 (approximate)

-square footage: 139,212 total; average 500-529 for studios, 668-700 for 1 bed, 926-1,000 for 2

bed

Appendix 1- Building Data (continued)

-Type of heating and cooling system: each apartment has its own central heating and air system;

20 studios have their own wall unit (AC + heat pump, which are apparently very expensive to

replace…)

-monthly water, gas and electricity usage: electricity billed every other month; for the studios,

approximately $30 (approximate) and $70-$120 for the 2 bed (approximate); same $15 water/gas

charge as Atrium Court

-trash system: no composting, communal recycling bins, trash pickup 5 days per week

-parking: 280 spaces available, 98-99% in use

-elevators: 4 total, totally updated in 2003

Appendix 2 – 2011 ART On/Off Campus Survey

 (https://qtrial.qualtrics.com/SE/?SID=SV_a3MOfxYopWssTNW)

"Residential Life Survey: Thank you for filling out this survey. Upon completion, you will be

entered for a chance to win $10 and $25 ASUCLA gift cards, reusable canvas bags, and stainless

steel water bottles.   NOTE: You may save your entries and return to the survey at a different

time. However you must complete the survey by Sunday, May 15."

Q1 What is your year at UCLA?
0   1st
1   2nd
2   3rd
3   4th
4   5th

Q2 Are you a transfer from a community college or other college?
5   Yes
6   No

Q3 What type of residence do you currently reside in?
7   On-campus residence
8   Off-campus university owned apartment
9   Off-campus private apartment
10   Private home

Q4 Please type the following information about your on-campus residency.
Building name
Number of residents in room

Q5 Please enter the following information about your off-campus university owned apartment.
Apartment complex name
Apartment complex cross streets
Number of residents in apartment
Number of rooms

Q6 Please enter the following information about your off-campus private apartment.
Apartment complex name
Apartment complex cross streets
Number of residents in apartment
Number of rooms

Q7 Please enter the following information about your private home.
Home cross streets
Zip code
Number of residents in home
Number of rooms
Year built (approximate if unsure)
Distance from campus (in miles)

Q8 How do you get to campus? Select the answer for the mode you use most often, 70% of the time or more.
11   Car
12   Carpool
13   Public Transit
14   Bicycle
15   Walking

Q9 Rank these modes according to use in getting to campus (1 being the most commonly used, 5 being the least commonly used). Use your mouse to drag the mode of transportation to the appropriate number.
_____ Car
_____ Carpool
_____ Public Transit
_____ Bicycle
_____ Walking/Skateboard

Q10 Please type the year, make, and model of the car you use to get to school.
Year
Make
Model

Q11 How do you primarily travel otherwise (For errands, local trips, etc.)? Choose the ones used a majority of the time.
0   Car
1   Carpool
2   Public Transit
3   Bicycle
4   Walking/Skateboard

Q12 Rank these modes according to use (1 being the most commonly used, 5 being the least commonly used). Use your mouse to drag the mode of transportation to the appropriate number.

_____ Car

_____ Carpool

_____ Public Transit

_____ Bicycle

_____ Walking/Skateboard

Q13 Please type the year, make, and model of the car you use for these errands, local trips, etc.
Year
Make
Model

Q14 Does your apartment building/home have recycling bins available to you?

16   Yes

17   No

Q15 Does your apartment building/home have on-site compost OR a green-waste bin that accepts food waste, available to you?

18   Yes

19   No

Q16 Do you actively recycle in your residential room / apartment / home?

20   Yes

21   Somewhat consistently / Not everything

22   No

Q17 Do you collect compost in your residential room / apartment / home?

23   Yes

24   No

Q18 How likely would you be to compost if your residence had a composting program? (If you had the ability to collect compost in your room / apartment / house and take it or get picked up to get composted)

25   Unlikely

26   Possibly

27   Likely

Q19 In your residence buildings, what utilities do you pay for separately from your rent? (you pay based on your actual use)Select all that apply.

5   Electricity

6   Gas

7   Waste Removal

8   Water

9   Internet

Q20 ELECTRICITY How much electricity does your residence use each month?   Please provide actual amounts as stated on your bill. These amounts are also available online where you may set up an account with your electricity company to view statements online.   To get help on finding these numbers, see this example bill explained. NOTE: You may be billed bi-monthly (ex. for 45 days or 60 days) - if this is the case, skip the previous month (put X in answer boxes) and fill out the month that you were billed for, taking note of the days billed. Exclude any rollover charges ($) from previous unpaid months.

Q21 Who is your Electricity Provider (ex. LADWP or AUM)?
Company name:

Q22 January 2011
Total kWh used
Total days for kWh use / "Days Billed"
Total paid for electricity

Q23 February 2011
Total kWh used
Total days for kWh use / "Days Billed"
Total paid for electricity

Q24 March 2011
Total kWh used
Total days for kWh use / "Days Billed"
Total paid for electricity

Q25 April 2011
Total kWh used
Total days for kWh use / "Days Billed"
Total paid for electricity

Q26 May 2011
Total kWh used
Total days for kWh use / "Days Billed"
Total paid for electricity

Q27 GAS How much gas does your residence use each month?   Please provide actual amounts as stated on your bill. These amounts are also available online where you may set up an account with your gas company to view statements online.   To get help on finding these numbers, see this example bill explained.   NOTE: You may be billed bi-monthly (ex. for 45 days or 60 days) - if this is the case, skip the previous month and fill out the month (put X in answer box) that you were billed for, taking note of the days. Exclude any rollover charges ($) from previous unpaid months.

Q28 Who is your Gas Provider (ex. SoCal Gas)?
Company name:

Q29 January 2011
Total Therms used
Total days for Therm use / "Days Billed"
Total paid for gas

Q30 February 2011
Total Therms used
Total days for Therm use / "Days Billed"
Total paid for gas

Q31 March 2011
Total Therms used
Total days for Therm use / "Days Billed"
Total paid for gas

Q32 April 2011
Total Therms used
Total days for Therm use / "Days Billed"
Total paid for gas

Q33 May 2011
Total Therms used
Total days for Therm use / "Days Billed"
Total paid for gas

Q34 What appliances & electronics do you have in your apartment or house? Select all that apply.
10   Dishwasher
11   Refrigerator
12   Mini-fridge
13   Washing machine (if in actual apartment, not building)
14   Dryer (if in actual apartment, not building)
15   Microwave
16   Air Conditioning
17   Heater
18   DVR
19   LCD TV

Q35 What appliances & electronics do you have in your on-campus residence? Select all that apply.
20   Mini-fridge
21   Microwave
22   Air Conditioning
23   Heater
24   DVR
25   LCD TV

Q36 How often do these get turned off or unplugged when you sleep or leave your residence (by yourself and/or roommates)?

	Rarely	Occasionally	Frequently	Almost Always	Don't have AC/Heater
Lights	28	29	30	31	32
Air conditioner / Heater	33	34	35	36	37
Electronics (computer, TV, DVR, etc)	38	39	40	41	42

Q37 How often do you and your roommates use Air Conditioning and / or Heating, on average?

	Rarely	Occasionally	Frequently	Almost Always
Air conditioning	43	44	45	46
Heater	47	48	49	50

Q38 Does having to pay your utility bills separately from your rent influence your use of utilities (as it changes based on actual electricity / gas / water use)?
51   Yes - I use less so I can pay less
52   Somewhat - It affects my use only a small amount
53   No - I use less for environmental reasons, cost is secondary or does not matter
54   No - I use as much as I would regardless of monthly cost

Q39 Would having to pay your utility bills separately from your rent / housing fees influence your use of utilities? (so that it reflected actual electricity / gas / water use)
55   Yes - I would very likely use less so I could pay less
56   Maybe - it might affect my use only a small amount
57   No - I would use less for environmental reasons, cost is secondary or does not matter

58   No - I would probably use as much as I would regardless of monthly cost

Q40 If you have air conditioning, is it electric or gas?
59   Electric
60   Gas
61   I do not have an air conditioner.
62   Not sure

Q41 If you have a heater, is it electric or gas?
63   Electric
64   Gas
65   I do not have a heater
66   Not sure

Q42 Do you and your roommates ever disagree on matters dealing with energy usage in your home such as leaving appliances/lights on, using heating/air conditioning? Please provide examples.

Q43 Please describe any behaviors you and your roommates use to conserve electricity use, reduce landfill waste, or reduce transportation impact while going to UCLA.

Q44 Any other notes or comments regarding your answers to these survey questions?

Listed below are statements about the relationship between humans and the environment. Please indicate the degree to which you agree with each item, as honestly as you can.

Q46 We are approaching the limit of the number of people the earth can support.
67   Strongly Disagree
68   Disagree
69   Neither Agree nor Disagree
70   Agree
71   Strongly Agree

Q47 Humans have the right to modify the natural environment to suit their needs.
72   Strongly Disagree
73   Disagree
74   Neither Agree nor Disagree
75   Agree
76   Strongly Agree

Q48 When humans interfere with nature, it often produces disastrous consequences.
77   Strongly Disagree
78   Disagree
79   Neither Agree nor Disagree
80   Agree

81   Strongly Agree

Q49 Human ingenuity will insure that we do not make the earth unlivable.
82   Strongly Disagree
83   Disagree
84   Neither Agree nor Disagree
85   Agree
86   Strongly Agree

Q50 Humans are severely abusing the earth.
87   Strongly Disagree
88   Disagree
89   Neither Agree nor Disagree
90   Agree
91   Strongly Agree
Q51 The earth has plenty of natural resources if we just learn how to develop them.
92   Strongly Disagree
93   Disagree
94   Neither Agree nor Disagree
95   Agree
96   Strongly Agree

Q52 Plants and animals have as much right as humans to exist.
97   Strongly Disagree
98   Disagree
99   Neither Agree nor Disagree
100   Agree
101   Strongly Agree

Q53 The balance of nature is strong enough to cope with the impacts of modern industrial nations.
102   Strongly Disagree
103   Disagree
104   Neither Agree nor Disagree
105   Agree
106   Strongly Agree

Q54 Despite our special abilities, humans are still subject to the laws of nature.
107   Strongly Disagree
108   Disagree
109   Neither Agree nor Disagree
110   Agree
111   Strongly Agree

Q55 The so-called "ecological crisis" facing humankind has been greatly exaggerated.
112   Strongly Disagree
113   Disagree
114   Neither Agree nor Disagree
115   Agree
116   Strongly Agree

Q56 The earth is like a spaceship with very limited room and resources.
117   Strongly Disagree
118   Disagree
119   Neither Agree nor Disagree
120   Agree
121   Strongly Agree

Q57 Humans were meant to rule over the rest of nature.
122   Strongly Disagree
123   Disagree
124   Neither Agree nor Disagree
125   Agree
126   Strongly Agree

Q58 The balance of nature is very delicate and easily upset.
127   Strongly Disagree
128   Disagree
129   Neither Agree nor Disagree
130   Agree
131   Strongly Agree

Q59 Humans will eventually learn enough about how nature works to be able to control it.
132   Strongly Disagree
133   Disagree
134   Neither Agree nor Disagree
135   Agree
136   Strongly Agree

Q60 If things continue on their present course, we will soon experience a major environmental catastrophe.
137   Strongly Disagree
138   Disagree
139   Neither Agree nor Disagree
140   Agree
141   Strongly Agree

Thank you for participating in our survey. Your participation will be used to help form recommendations to UCLA Housing and educate UCLA students on green living.