

ART Recycling Final Report 2011

*A comprehensive report detailing the research, analysis and findings of
the 2011 ART Recycling Team*



Recycling Action Research Team 2011

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Executive Summary

UCLA produces about 24,000 pounds of waste each year. The UCLA Climate Action Plan of 2007 laid out initiatives and goals to reduce this waste: the campus is aiming for 75% waste diversion by 2012 and zero waste by 2020. As the 2012 date approaches rapidly, our ART team has faced daunting yet rewarding tasks: to assess and evaluate the current waste situation, to implement change, and to educate, inform and inspire the entire student body.

We focused our initiatives on two target areas: outdoor recycling and indoor recycling. Last year's Recycling Team redesigned the waste bins and helped to convert campus to single stream recycling. However, much confusion arose from their word choice on the bins. We conducted a survey to the student body and found that many people did not recycle correctly simply because they were not sure what to do. Our goal was to eliminate this unnecessary confusion caused by signage. To carry this out we designed new, clear signs to laminate and hang on the bins. Results from our survey and conversations with students on Earth Day showed us how essential outreach is to our project. We made posters and flyers and put them in eye-catching, public places such as Bruin Walk, a flyer in the bathrooms of Powell Library and the UCLA Jazz Reggae Festival. The convenience of information is crucial on a university campus. Future initiatives should focus on educating students in ways that will catch their attention and encourage them to remember how to act and why it is important. For example, next year's action research team could put up signs in the dining hall or the Daily Bruin.

Our indoor campaign consisted of a recycling competition between the Bunche and Public Affairs buildings and was mostly directed towards UCLA staff and faculty. Our focus here was on increasing desk side recycling and encouraging faculty, counselors and researchers to take the extra second and make the right decisions. Though our team greatly values sustainability, one of our greatest challenges is to cultivate that same motivation in others. It is difficult to gauge the best method to develop this drive, but competition is one way to both introduce a new concept to people and inspire them to work towards a common goal. After a month long competition, our data shows a significant increase in single stream recycling in Public Affairs and an increase in white paper recycling in Bunch. Next year's team could extend the competition to more buildings on campus.

We carried out several specific initiatives over Winter and Spring quarter, but our long term goal has more of a social concentration. Our action research team aspires to inform students and alter their behaviors to make recycling something valuable and natural for the student body. We are trying to implement an easy to follow and easily accessible recycling program so that students do not even have to bat an eyelash in order to make the right choices.

Goals and Objectives

Since the roll-out of the new bins there has been a great deal of feedback from the UCLA community. The main criticism that we have received is that students are now more confused about what goes in which bin due to unclear wording. What exactly constitutes “food waste”? Is my wax-paper candy wrapper recyclable? These were all questions that we heard circulating the campus, as students attempted to understand this new single stream system. This year’s ART Recycling Team main goal was to reduce confusion surrounding the new bins, and inform the UCLA community about proper recycling habits. We planned on accomplishing this through surveying, educational fliers, and other forms of outreach.

The second prong to our team’s project centered around indoor recycling. Since most of UCLA’s waste is generated “underneath the desk,” it is necessary to address how we can improve faculty and staff recycling behavior in buildings around campus. We decided to design a recycling competition between two prominent buildings on campus, Bunche and Public Affairs. The building that was able to increase their recycling rates the most would be the winner.

Background

One of UCLA’s sustainability goals is to reach zero waste by the year 2020, and campus recycling plays a huge role in seeing that goal achieved. Last year’s Recycling Action Research team implemented a single stream recycling system with great success to simplify the recycling process and encourage students, faculty, and visitors to the UCLA campus to become aware of and engage in recycling. Because recycling greatly decreases the amount of waste that UCLA sends to landfills, our contributions to the UCLA community and its goal for zero waste are significant. Through education, outreach, and improvements to the current recycling system, our team will increase campus awareness of recycling and its role in sustainable behaviors and practices.

Sustainability is more than just isolated behaviors or choices. It requires a complex awareness and understanding of both micro and macro systems and processes in our society that both limit and command us to live and think more sustainably. Before the UCLA community can adjust their habits to become effective consumers and recyclers, they must be aware of the related issues at hand and understand how to use the single stream system. Our team’s main focus is to clarify any misunderstandings regarding the single stream system put in place last year and to educate the community on recycling and issues within the realm of waste management. Through this education, students can become less frustrated and more willing to adopt sustainable behaviors and continue to develop sustainable outlooks on both their individual behaviors and the activities of our society as a whole.

Initial Conditions

Although last year's ART Recycling Team did an excellent job implementing new trash and recycling bins on campus and making more recycling bins easily accessible, some students and faculty expressed confusion about what exactly is and is not recyclable. For instance, after last year's team installed the new bins, they did a survey about their effectiveness and one student said, "I liked that all recycling can go into one bin, but I'm confuse about what is actually recyclable. Can cups with liquid/ice go in? Do you need to rinse/clean plastics before they are recycled? It says everything except food waste is recyclable, but is that really true? What about a wrapper or a pen or something like that? I think the program has made huge improvements, but I'd like to see an educational campaign to explain what goes in which can." Thus, based off of last year's recycling team's report and feedback from students on campus, our team decided that not only was there a need for signage to be posted at the bins for further clarification on recyclables, but that there was also a need for education outreach about recycling in general on campus.

The need to research contamination rates of recycled materials was also prevalent, as last year's team was concerned that switching to single stream might increase contamination.

As most of UCLA's weight is generated under the desk, our stakeholders encouraged our team to reach out to some of the buildings on campus and create an office/staff recycling competition to see if that could improve building recycling rates. We decided to start with the buildings of Bunche and Public Affairs. Before the competition could begin, we needed to calculate the baseline numbers of Bunche and Public Affairs's recycling rates in order to determine if our competition had any impact on the recycling habits of the faculty and staff of each building. We based each building's baseline off of their recycling rates during the months of January, February, and March. During these three months, Bunche's recycling totaled 65.74% of all their waste generated, with 22.51% in white paper and 42.23% in single stream recycling. Public Affairs recycling totaled 69.95% of all their waste generated, with 15.16% in white paper and 69.95% in single stream recycling. We also needed to reach out to the faculty and staff of each building to see if they were willing to participate.

Researching Methodology

During Winter quarter we conducted a survey that reached 170 UCLA students. We created a survey through Survey Monkey and then distributed it out through facebook and UCLA listserves. In this survey we asked students how easily they understood the current recycling and trash bin labels on campus in terms of knowing what to put in each bin. To further our analysis, we felt it was necessary to understand how confident students are in their recycling abilities. A student's confidence level is a direct indication of the clarity of the bins. If students are "highly confident" in their ability to place items in the correct bins, than it can be assumed that they fully understand the wording as well as the concept of single stream. We also conducted this survey to quantify the value of attaching the visual aids to the bins. A follow-up question allowed students to comment on how these signs could be made more visually appealing and more easily understood. Please refer to the below Data/Cost Analysis for the results of this survey.

For the indoor competition, we computed and evaluated the recycling/waste tonnage from Public Affairs and Bunche. Chris Gallego and his team at Facilities Management weighed the waste weekly and provided us with the tonnage at the end of each month. Firstly, we took the statistics from the months of January, February and March and averaged the percentages to reach a baseline number. By computing the average, we eliminated any outliers that could have greatly skewed our data. After the launch of the competition at the beginning of May, we sent out emails to faculty and staff in the two buildings, informing them of ways to increase their recycling rates. At the end of May, we revisited our baseline number and compared this to the recycling rates from the month of May. Please refer below for the results of this competition.

Data/Cost Analysis

Outdoor Recycling

When surveyed inquiring the comprehensibility of the current outdoor recycling bins, the majority of respondents claimed they were confused about the current language of the recycling bins, with 46.50% of respondents claiming that they were “somewhat confusing in their language, but able to be understood,” 11.80% claiming they were “too confusing in their language to be easily understood” and 10.00% claiming that they were “way too confusing” and they did not know what to put in each bin. Only 32.40% thought they were “clear and easily understood.”

When asked how they would rate their confidence in their ability to recycle properly, only 20.00% were confident in their ability, answering “I know what items are appropriate for each bin.” 50.00% claimed they were “pretty confident”, while 25.90% said they were “confused, but I think I have some idea what to do.” Only 4.10% answered that they had “no idea what to do.”

When shown the first draft of the recycling signage designed by Nurit Katz and the ART team, 74% of respondents said their ability to properly recycle items was “greatly improved.” When asked if they would take the time to read the signs if posted at the bins, 85.80% said they would.

Respondents were offered the chance to suggest ways the signage could be improved. Suggestions included:

“Make "Recycle" and "Trash" more clear. In smaller writing clarify the difference.”

“More pictures of the most common items used on campus, like a red Coca-Cola paper cup used in many restaurants on campus.”

“One should be: food, non-recyclables. The other should be: everything else.”

In a similar response section, respondents were asked for any other questions or comments they had concerning recycling and waste management on campus. Some of the answers that stood out included:

“Why are these waste bins NOT at critical areas like Ackerman food court, Northern Lights, etc? It's almost like there is a certain distance away that these bins must be from these eating areas and I don't see why that is the case. Eating areas are the place where most trash is thrown away so I feel that if anything, these recycling/waste bins should be concentrated there. Instead we have regular trash and at best, we have the aluminum recycling bin.”

“Can we get composting bins around campus?”

“Make it clear that light food residue is allowed to be recycled. Sometimes I might finish a cup of yogurt but because there is slight food residue I don't feel like it can be recycled. This should be made clearer.”

Indoor Recycling

The baseline numbers to be used for comparison for the building competition were based off the recycling tonnage from Bunche and Public Affairs during the months of January, February and March. During these three months, Bunche's recycling totaled 65.74% of all their waste generated, with 22.51% in white paper and 42.23% in single stream recycling. Public Affairs recycling totaled 69.95% of all their waste generated, with 15.16% in white paper and 69.95% in single stream recycling.

For the month of May, Bunche's recycling decreased to 64.80% of all their waste generated, while decreasing their white paper recycling to 18.24% and increasing their single stream to 46.56%.

Public Affairs actually decreased their recycling to only 67.34% of their total waste, while increasing their white paper recycling to 20.38% and decreasing their single stream to 47.96%.

Both buildings decreased their recycling percentage, meaning they had more trash waste than typical for them. For the sake of the competition, Bunche was deemed to be the winner as they had increased their single stream recycling. Explanations for this deviation from the expected include:

1. The months of January, February and March may not have been typical months for trash and recycling in Bunche and Public Affairs – therefore, they were not representative of the building's typical recycling habits and should not have been used as a baseline comparison.
2. Advertisement of the competition and encouragement to participate may not have been strong enough in the buildings.
3. There was no incentive offered for winning the competition, which may have caused disinterest.

It should be noted that the results do not vary significantly from the baseline, so they should not be considered unusual (they are both within 3 percentage points from the baseline). The buildings both only decreased slightly, so they are not that different from typical, if we accept that the January, February, March average was typical.

Key Findings

Our initial survey on the clarity of the current signage at trash and recycling bins showed us that the majority of students on campus are confused about how to recycle properly. Our survey also reaffirmed that most students are not confident about their knowledge of how to recycle properly. Both results confirmed that it is in our best interest to post signage at trash and recycling bins that makes it clearer as to what exactly should and should not be recycled.

At our ART Recycling Team table during Earth Week, we had a poster with various food and beverage containers such as a plastic water bottle, Styrofoam to-go box, glass bottle, plastic candy wrapper, egg carton, etc. Below each item we had its decomposition rate listed underneath a flap of paper. In order to get an additional sticker for their passport to the environment, students had to guess the decomposition rates of the different items. Generally, students were extremely off in their guesses, and the majority of students did not know that plastic only photodegrades and never completely decomposes. Through conversation with many students, we learned that most did not know that you cannot recycle items like granola bar wrappers or candy wrappers. There was also still some confusion about the amount of food contamination an item can have while still being recyclable. This further proved the need for extra signage to be posted at the trash and recycling bins. In the event that students might not read the additional signage posted at the bins, further education on how to recycle properly is needed. Education, that is, on not only recycling but reducing their use of certain food items, plastic in particular, could be of extreme benefit.

Our data from Bunche and Public Affairs before and after the recycling competition showed us that although, the months of January, February, and March may not have been typical for recycling percentages in both buildings, more education is needed to improve the recycling behavior of faculty and staff. Perhaps education workshops could be held once a quarter on how to not only improve faculty and staff recycling rates but also improve their office sustainability habits as a whole. Prize incentives could also encourage increased participation in staff and faculty motivation to recycle.

Recommendations

Next year's recycling team should continue to perfect the clarity and usability of the single stream system, specifically the wording used on the bins, as well as work towards standardizing an indoor recycling program that works in tandem with the outdoor bins. At the urge of stakeholders, we propose that next years' team should extend the building completion to Law and Murphy. These are two buildings that have already shown great interest in indoor recycling. Also, because of the large volume of faculty members in these two buildings, education would be far-reaching and hopefully help spread the information more quickly over all of campus.

In addition, next year's ART team should transition their focus towards consumption and waste production as a whole, educating the campus on why it is more important to use less instead of recycling more and encouraging them to transition away from using single-use items and excess packaging that almost immediately ends up in the trash. Recycling is great and important in our sustainability goals, but it should not be used as a crutch or as justification for creating waste, but rather as the best method of disposal we have. Awareness of our waste behaviors joined with an understanding of recycling would greatly increase the UCLA community's understanding of sustainable habits and goals. A great way to increase this awareness and understanding would be to create an informational online guide to recycling to be distributed to incoming freshmen. This way UCLA's newest generation of Bruins can hit the ground running and view sustainable behaviors as a UCLA standard.

Conclusion

We learned something simple but enlightening while conducting research. Change doesn't happen over night; the little steps are essential and maybe even the most important. At the Earth Day fair, a confused student approached me wondering whether his plastic salad container was recyclable. It turned out that he had refrained from recycling because he didn't actually know how, so I explained to him which items are recyclable (and compostable) and why it is important. This seemed to instantly clear up his confusion and he told me that he would take that extra minute in the future to make a sustainable decision!

We also shocked many students with facts about the longevity of plastic in the world; our motto: "Plastic is forever." Our hope is that catchy, bold statements like that will stick in the heads of students and remind them to stop and think before grabbing a plastic bag at the grocery store or buying a product with excessive packaging. We hope to have dispensed many tidbits of knowledge to create a spark in the minds of students and effect their future decisions. This process is long and difficult, but we must realize that we are making a difference.

Several of the challenges we have faced shine light on to ways to improve the ART program in the future. Throughout the two quarters we have confronted a few obstacles which have interfered with the timeliness and effectiveness of our projects. We have done lots of brainstorming, but most of our initiatives -- clarifying labels, putting up signs, and the building competition-- require approval from an authority before we can implement anything. Our plans trigger a continuous stream of questions, which we must ask people who specialize in certain areas. This process can be quite sluggish, since we only meet once a week, and we have had to give ourselves longer periods of time to achieve our goals. It may be difficult, but we would recommend improved communication efforts between team members and facilities management employees for next year's ART team.

The nature of running a recycling campaign brings about a variety of social and psychological issues which we have confronted and which will continue to be confronted in environmental efforts. Not only do we have to change designs and policies to improve recycling, but we have to change the way people think! It is clear from our survey and from just observing the trash cans on campus that a large percentage of the UCLA population is unaware or doesn't care about recycling. This negativity can be very offsetting to people like us running a recycling campaign. However, it is precisely this apathy, ignorance and disconcern towards sustainability which we have hoped to improve upon with our project. The social problems we confront in our research are the KEY to shaping and reshaping our goals! This is what is so important about an action research team.

Due to cumbersome processes, we still haven't completely implemented our entire project. We still need to attach how-to signs to garbage and recycling bins, get stickers on them, make signs for JazzReggae Festival and fully carry out our building competition. But we will most certainly finish these tasks (if not more!) by the end of Spring Quarter.

Then what's next? We continue to strive for the UCLA mandated goal of 75% diversion by 2012 (next year!!) and zero waste by 2020. We believe that the combination of clarified recycling system and student outreach is the path to success. We did lots of outreach – the Earth Day Fair, Writings on the Stalls, our survey – but much more remains. Perhaps next year's ART team could post memos on the tables of UCLA dining halls or try to get an article or advertisement into the Daily Bruin? Another future goal (for next year's ART Recycling team as well?) which we believe essential is to develop a brief but mandatory recycling presentation or interactive workshop at UCLA orientation. The biggest problem with recycling on campus is that people don't know how to do it! ALL students attend orientation so this would be the best way to make sure our message is heard by everyone. The students can then carry these skills into their next four years. Our ultimate goal is to increase recycling on campus by making it easier, more appealing and more readily available. More generally, we want to make the right choice -- the sustainable choice -- SECOND NATURE.

Appendices

STICK IT IN THE BLUE!
*Recycling can be confusing.
 We're here to help.*

Help! I just got flyered!
 If it was this flyer, it's okay! Read it, learn it, love it, and then flip it over and learn what to do with it when you're done. If it was someone else's flyer, read it too! Maybe it's something you'd like to participate in. Then, when you're done, toss it in a **BLUE BIN**.

Plastics 1-9? What's that?
 Check your plastic for a symbol that looks like this:



**If the number in the center is 1,2,3,4,5,6,7,8, or 9...
 RECYCLE IT!**

This has a food and/or drink in it. What do I do?
 Eat and/or drink it! Yum!

But if you can't take anymore of it, toss the food and pour the liquid in the trash, and the recyclable container in the BLUE BIN.

I can totally recycle this chip bag, right?
WRONG!
 Sadly, your chip bags, granola bar wrappers and candy bar wrappers are not recyclable. Throw them in the trash, or better yet, buy food with recyclable or no containers - like an apple!

Questions? Email eslp.recycling@gmail.com for more info



Make the most of this flyer!
Don't litter Bruin Walk!
Here's how to handle this flyer:

REDUCEME
Commit me to memory, and then spread the word! We won't need to keep printing flyers like this if everyone knows how to recycle properly.

REUSEME
Spread the knowledge: pass me off to a friend; hang me on a wall; keep me in commission for as long as possible!

RECYCLEME
Once you've gotten all the use you can out of me, toss me in a blue bin!




These were the flyers that our team distributed at the Earth Day Fair. They were printed on recycled paper and used soy-based ink.



This is the signage that was created by Nurit Katz and used in the survey that we conducted.

*Please see Excel Spreadsheets for the extended survey results

What Do the Signs on Campus Waste Cans Mean Anyway?

For Everything except Food Waste (All Recyclables):

- Aluminum and tin cans
- Glass
- Plastics numbered 1-9
- Styrofoam
- Paper and cardboard
- Containers with light food residue

For Trash with Food Only (Non-recyclable Trash)

- Aerosol containers
- Cigarettes
- Wax-coated cartons
- Food waste
- Pet waste
- Containers with heavy food residue



Help UCLA reach zero waste by 2020. For more information about how UCLA can make recycling easier for you, go to <http://tinyurl.com/5w6dyul>.

This excerpt appeared in the March edition of “Writings on the Stall” which was hung up on the back of every bathroom door in Powell Library.