



# **UCLA**

## **Sustainability Action Research**

**Hospital Team**

**2016 Sustainability Action Research**

**Final Report**

Alessandro Lallas

Jennifer Adachi

Kiana Chan

Marjon Juybari

Ileana Callejas

Stakeholder: Teresa Hildebrand, Sustainability Programs Manager at UCLA

# Health

## **Table of Contents:**

Introduction.....	2
Background.....	3
Methodology.....	4
Results and Discussion.....	9
Challenges and Difficulties.....	11
Conclusion.....	15
Appendix.....	16

## **Introduction**

This quarter the Sustainability Action Research (SAR) Hospital Team continued to work on updating and implementing an educational sustainability module for UCLA Health staff and expanding the existing Sustainability Liaison Program (SLP). We organized and analyzed the data we collected last quarter from our general staff surveys and our sustainability liaison focus group.

We spent the beginning portion of the quarter updating the module. We focused on fact checking, citing sources, and replacing outdated images and graphics on the existing module. Many aspects of the module remain similar to the original, however, we added a new section called sustainability goals and cut out extraneous information to make sure that the module is as concise and simple as possible. Teresa Hildebrand, our stakeholder and the Sustainability Programs Manager at UCLA Health, is currently helping us coordinate with the UCLA Health Marketing Team so that the edits and links will be embedded correctly and that the module will go live on the UCLA Health website by the end of the academic year.

In celebration of Earth Day, the Hospital Team tabled at the UCLA Health Earth Day Fair at the Ronald Reagan Medical Center. We displayed our educational module prototype, answered questions about the SLP, recruited interested hospital staff to the program, and helped inspire general staff members to think more sustainably. Through our outreaching efforts at the Earth Day Fair, we were able to substantially increase the size of the SLP. With the help of Teresa, we will be coordinating with all the liaisons to finalize a project charter to formalize the roles, responsibilities, and goals of the UCLA Health SLP.

After making great strides on our project this quarter, we are confident that we are

leaving UCLA Health with the correct tools and a motivated team of individuals to implement long-lasting significant sustainable changes.

## **Background**

This year's Hospital Team follows in the footsteps of a long history of previous teams at Ronald Reagan Medical Center. The first Hospital Team was instituted in 2011 and each year afterward these teams have tackled various aspects of sustainability at UCLA Health. Last year, in 2015, the Hospital Team was removed due to a lack of potential projects for the students. This year UCLA Health saw potential for the SAR program in mitigating the environmental impact of the Ronald Reagan Medical Center and the Santa Monica Medical Center. Although the hospital is slow to evolve and there are many steps to making change, seemingly insignificant changes can actually make a big difference in the long run because of the huge impact of these facilities.

With the responsibility now in the 2016 Hospital Team's hands, we have worked diligently for the past 20 weeks to make a difference. Our stakeholder this year, Teresa, has been the Hospital Team stakeholder since 2012 and has an extensive understanding of how the UCLA Health system works and how to best navigate its complicated regulations.

Based on our research on other hospital systems' sustainability efforts, we found many potential areas of focus for our project. Transportation is generally an underdeveloped aspect of the hospital, leaving lots of opportunity for restructuring and encouragement of bike-sharing, carpooling, vanpooling, and shuttle buses. Further, the Emory University Hospital has been working to establish a large scale composting system (Wrobel 2010). Composting and recycling are two aspects of UCLA Health that are not widely done and significant environmental improvement could be achieved if we increase the awareness and efficiency of these waste

diversion programs. The Dartmouth-Hitchcock Medical Center, was able to cut water use by installing low-flow water fixtures and toilets. The reports we read showed us the great potential hospitals have to become more sustainable. Although Ronald Reagan has made significant changes within the past 10 years, there is still more that could be improved upon.

The 2016 Hospital Team started off the year with a long list of potential projects, but as we worked with Teresa and learned more about the difficulty of navigating the bureaucracy of the UCLA Health system, we quickly narrowed our scope to focus on education and outreach. We decided to work on updating and implementing an existing sustainability educational module from the 2014 Hospital Team. By making a concise, helpful, and more accessible module that is open to all UCLA Health staff, we hoped to provide the tools to all interested staff members. Furthermore, we took on the task of relaunching the SLP by recruiting new members and formalizing the responsibilities of the members.

## **Methodology**

During the first quarter, we focused on obtaining an exact plan on what our team would accomplish over the subsequent two quarters. It took longer than usual to come to an agreement to revamp an educational module that 2014 Hospital Team started, but was not able to implement. Before committing to working on the sustainability module, we played with a few ideas that aided us in coming to a final project decision. At our first few initial meetings with Teresa, she suggested many initiatives that UCLA Health has already undertaken to improve hospital sustainability. The hospital has considered various areas that can use improvement in the hospital, including waste, water, food, transportation, and energy. Details on these specific efforts can be found on the UCLA Health website. Under these specific sustainability categories,

Teresa specified what is currently being done and what has not yet been undertaken. The team was eager to attempt to improve a wide range of issues to make significant changes at Ronald Reagan Hospital. The next few meetings with Teresa were dedicated to proposing our ideas. For certain meetings, specifically regarding expanding composting, Teresa contacted various departments in the hospital. Unfortunately, the team was not able to pursue many of our proposed ideas due to hospital rules, restrictions, regulation, funding, feasibility, and time. We then came upon the idea of updating the sustainability module from the 2014 Hospital Team. The directors of the SAR Program at UCLA, Carl Maida, professor of public health at UCLA School of Dentistry, and Dr. J. Cully Nordby, Academic Director of the UCLA Institute of the Environment, agreed that updating the module would be a good project choice, due to the bureaucracy and limitations that our team experienced with the hospital. We were hesitant at first because the implementation of 2014 Hospital Team's educational module was not successful. However, this compelled us to take on the challenge on how to engage the hospital to make sustainable change. We created a project timeline, and began our process to initiate sustainable educational awareness at Ronald Reagan Medical Center.

We first started by going through the online module itself to see where improvement could be made. We found that it was text heavy, lengthy, and did not convey the sustainable efforts of UCLA Health facilities, in particular. In order to find out how best improve the module, our team decided to conduct surveys of staff workers of UCLA Health. We created a short printed survey to engage staff members about their views towards sustainability and how staff members best process educational information. Questions included individual's rate of concern for sustainability at their medical center, awareness of the SLP, interest in being part of a

sustainability initiative, preferred forms of receiving information, and a comments and recommendations section. Team members were dispatched in groups, covering both Ronald Reagan and Santa Monica Hospitals and approached employees from a diversity of departments in the lobby area, cafeteria, outdoor seating area, and by the gift shop at varying times over the course of a few days.

In our first few meetings, Teresa also informed us of the SLP at the hospital. This program is comprised hospital workers, or, sustainability champions from various departments who advocate for sustainable change within their respective departments. The idea is for every department to make small but significant changes, that would eventually lead to major changes collectively. Currently, the SLP consists of several individuals that get occasional emails from Teresa and have low responsibility roles within the hospital. Our hope as the UCLA Hospital Team is to not only update the module, but also to relaunch this program to make it more effective.

Our team had questions on the logistics and effectiveness of this program, so we decided to set up a focus group to understand the roles they play. These questions were a lot more extensive than the surveys we conducted, simply because members of the program already expressed interest in sustainable issues. The questions we wrote down included questions on the current and desired role of a sustainability liaison, the openness of various departments to sustainable changes, and the most effective means of expanding the program. We ended up sending this out as a Google Form, as no liaisons attended our focus group.

For the second quarter, we wanted to dive right into updating the module to incorporate the results of our survey and improving the SLP. To update the module, our goal was to

accomplish several things. The first was to update the information that was present. There have been several changes at Ronald Reagan in their sustainability efforts with regards to waste, water, food, transportation, and energy. We researched these efforts on the UCLA Health sustainability website and noted the changes. Through Teresa, we gained access to edit the module through WIX and proceeded to go through each section and add the appropriate text.

After it was up to date with the information, we progressed to edit the content of the module. As noted before, the module was very long. In order for it to be more concise, our group went through each section and as a whole decided what to cut out. Our original goal was to make it very image-heavy, however, per our survey results, we left a lot of the information in text format.

All images placed on the module must be approved through marketing first. The original images on the module were also not sourced, another requirement, so we proceeded to sort through each picture in order to find a source and send them out for approval. We opted to use most images from the UCLA Health sustainability page to expedite this process. The last changes we made to the module were simply aesthetic. This encompassed format, font, and placement changes.

The team attended the annual Ronald Reagan Earth Day Fair. We discussed with Teresa and decided this would be a great place to spread awareness about the SLP as well as to sign new members to become Sustainability Liaisons. On the day of the event, we set up a table in the patio/break area and Teresa got us a white table cloth with our logo on the front. Two members were present at a time with a laptop, liaison sign-up sheet, and a table-stand sign on the table. If employees went through the module on our laptop and signed up to come a liaison, they got a

canvas tote bag, which was supplied by Teresa and beared the UCLA Health logo on the front. Liaison sign-up was open to all employees in all different departments. When signing up, workers were required to put their name, email, and department they work for. After the Earth Day fair was done, we compiled this information and sent it to Teresa to add them on the liaison email list.

The communication that occurs from Teresa to liasons is solely through email. Teresa handles all logistics since emails, communication, and any info-blasting that the sustainability department does at Ronald Reagan must go through approval. She is also the middle-person in communicating with the new and current liaisons, as she is the only one with access to their email addresses.

There is not much awareness throughout the hospital or proactive-ness in the program. When tabling at Ronald Reagan, the majority of the workers we talked to were not aware of the SLP's existence. When we met with Teresa, we discussed how to combat this issue. To increase hospital-wide awareness, Teresa will continue to work with the marketing department to make the liaison program a regular occurrence in the hospital newsletter and Facebook page. We could not put signs up because they were restricted by the aesthetics committee.

When discussing new ways to make the program better, we heavily stressed incentives. Teresa will take the reins to spearhead this in the future. For all new and current liaison, we were in the works of getting approval to get a little sustainability pin that is placed on the worker's name tag. To keep liaisons motivated, we decided to give out incentives to the top liaison who exhibits the most drive and are the most proactive in pursuing change. From our focus group questionnaire, the reward for this can be food and/or gift cards. To date, we have not received

permission to do so, however Teresa is pushing for it and she believes she will be able to for the next fiscal year. Another incentive for employees to complete the module is a printable certificate that is generated when the quiz is complete.

To combat the unclear direction of what the liaisons are required to do, we created a charter that lays out the expectations of a sustainability liaisons' goals, responsibilities, and rewards. This will be sent out to all new liaisons as a way to kick start their entry into the program. It will also be sent out to current liaisons to answer any questions they may have had for the program. We are also hoping it will revamp them into making departmental changes now that they have a new set of goals and expectations.

The last thing we did was request that the module be implemented on the actual UCLA Health website. This would make it look like an official integrated part of the UCLA Health system. To date, it is not currently live on the site due to no committee approval, however, Teresa mentioned that it looks very promising that it should be live on the site in a few weeks.

## **Results and Discussion**

In total, the Hospital Team surveyed 50 staff members from the UCLA Medical Centers at the Ronald Reagan and Santa Monica sites. The responses indicated that the average rate of concern about hospital sustainability at both centers was 6.86, on a scale from 1 to 10, with 1 being the lowest level of concern and 10 being the highest level of concern (Figure 1). Very few staff members have ever heard of the SLP, with a awareness rate of only 4%. The responses indicated that the average willingness to take initiative in sustainability leadership roles at their respective medical centers was 5.7 (out of 10). Respondents indicated that their most preferred methods of receiving information about sustainability was through word text, images, videos,

and audio, respectively (Figure 2). Other suggestions of effective means of communication about sustainability included flyers, email, and social media. Through the additional comments section of our survey, the Hospital Team also learned that there was a desire among staff members and individuals who were temporarily employed at the medical center, to learn more about hospital sustainability.

In addition to our survey of hospital staff members, we also conducted an online focus group on Google Forms aimed towards gathering information from current Sustainability Liaisons about their views of program and ways that it could be improved. We gathered responses from liaisons who represented a variety of hospital departments including both the Ronald Reagan and Santa Monica Medical Centers, as well as the outpatient clinic in Westwood. Out of the six responses, respondents were generally part of the program for at least one year, one of which had been involved for 4 years. Liaisons heard about the program from either Teresa, another colleague, or through an email. Many liaisons indicated that they have been minimally involved in sustainability projects such as waste management, initiating paperless files, recycling, and education/outreach in their departments, despite the significant length of their membership to the program, the Liaisons' thoughtful written responses indicated that many of their roles have been limited and they would like to do more. The liaisons expressed a deep desire to inspire others in their departments to contribute to greater sustainability initiatives in the medical centers. They also provided some insight as to how we could incentivise other staff members to complete the module – liaisons suggested stickers or pins to distinguish themselves as sustainability ambassadors within the hospital, certificates of completion, or free lunches. In addition, the respondents suggested that effective ways to recruit new liaisons and make the

module more engaging include photos, videos, and flyers.

This valuable information that we gathered from the survey and online focus group has allowed us to gain further insight regarding medical center staff members and current liaisons' perspectives on hospital sustainability. In order to create a more engaging module catered towards the learning preferences of the survey respondents, we have incorporated many of the suggested means of communicating information into our module. Through outreach and recruitment efforts at the UCLA Ronald Reagan Medical Center Earth Day Fair and emails, we were able to increase the SLP by 40%, from 30 to 42 members (Figure 3). Our next step is to conduct an additional focus group with the new liaisons to draft a charter that will outline the members' responsibilities in their respective departments. Through this charter, we hope to start an initiative that will spark greater roles of responsibility as sustainability liaisons in their departments. The Hospital Team hopes that by re-launching of the SLP, we can help create a leadership force that is passionate about making a difference and continuing to make contributions to sustainability initiatives at the UCLA Medical Centers.

### **Challenges and Difficulties**

The Hospital team has accomplished a lot since the beginning of the project, but many challenges arose that delayed our progress or even set us on a different track altogether. Despite our best efforts to start with an original project to improve sustainability throughout the UCLA Health system, we were unable to begin with a fully blank slate. The most difficult aspect of our project was trying to circumvent the enormous facility's constraints and protocols. These hampered our progress all throughout the course of the project by creating numerous roadblocks. Nonetheless, we managed to cope with the hospital's regulations thanks to Teresa; she is very

acquainted with navigating these intricacies. However, these stringent regulations did give us boundaries for the remainder of the project.

The first five weeks of winter quarter were spent brainstorming imaginative solutions to these constraints. Some propositions included improving the waste management system, ensuring the cafeteria was serving locally sourced foods, and expanding the transportation program to increase staff accessibility. Our ideas were systematically dismissed leading us to consult Denita and Liz for potential projects. Our discussions with them in conjunction with guidance from Cully and Carl led to the revitalization of the education module created by the 2014 Hospital Team. Initially, our team was not very enthused, but we eventually became more invested in the module, which became the project's main focus towards the end of winter quarter.

Although we had a solid framework, we were not yet out of the woods. Our first step was to understand what would most effectively maximize the module's outreach. We conducted surveys at both the Ronald Reagan and Santa Monica hospitals to gain an insight as to how the staff best receive information. It was arduous to gather enough surveys to have a sufficient amount of data. Many employees were uninterested in our initiative, others were too busy to help, and still others provided halfhearted answers. We split into teams depending on our availability to spend time at the facilities. It was difficult to find good spots to approach people to fill out the survey. In some instances we were told to move to a different area because we were blocking hospital staff passage. We found that loitering near the elevators or talking to people during their lunch break was the best way to get their attention. Though many people did not provide their insight, we still collected 50 surveys, enough to have statistically significant results.

As we scrutinized the surveys, it became clear which methods of presenting data were most popular and we incorporated this information into our module. Fortunately, the preferred methods, word text and images, were already the core elements of the module.

We needed to make many additions and modifications to the pre-existing platform. Some of the information was obsolete—this was expected considering it had not been touched for two years. We also wanted to make the module more pertinent to the hospital’s sustainability goals in order to inspire people to work towards a common objective. None of our group members were very familiar with the wordpress format, which is the layout we used to make edits, so it took us some time to learn to ropes to make improvements. We divided the module up into different sections to split the labor equally and then came together as a group to finalize our work. It was hard to research the topics we were including on the module and in some instances we had to settle for the best available information. Nonetheless, we successfully revamped it while also adding a few neat touches to make it more fun and interactive.

We also struggled with the format of the module. The previous Hospital team created it in the form of a wix which was only accessible to members of their team. We gained the access codes and converted it into a wordpress which made it easier to edit, yet it still could not be embedded into the UCLA Health system’s main website. We hoped to reformat and implement the module onto the main website to increase its outreach, however, we did not have the admin rights. We submitted the wordpress version to Teresa so she could put it in the proper format and integrate it onto the website. This module, though available throughout the entire system, is primarily to educate staff involved with the SLP assembled by Teresa a few years prior.

Expanding and amending the SLP became an integral part of our project. Given the

unsurpassable constraints in place at Ronald Reagan, it is difficult for a group of students to acquire the knowledge to maneuver the system in such a short amount of time. The employees are familiar with these regulations and work at the facility long term, giving them more opportunities and leverage to make meaningful changes. Our intention is to strengthen this program and to spread awareness of its existence. This will create a system of sustainable sustainability: the employees will themselves be the leaders of sustainable improvements. We wanted to educate ourselves about the status of the program once we had learned about its existence at the end of winter quarter so we decided to convene a focus group with all the members. Nobody showed up to our meeting even though some members said they were available. We set out to tap into the potential of this program to develop it into an active organization yielding a constant stream of sustainable renovations.

The list of members provided by Teresa was outdated; some of the members no longer worked at the hospital. We sought to identify which members were still around and interested. Approximately 30 people were still active in the program but many of them were unsure of their responsibilities. It was imperative to provide better instructions to the members of this program so we sent out a general survey to get their opinion. We received six responses which gave us some insight but we are mainly worked with Teresa to create potential tasks for these individuals. Furthermore, our recruiting efforts during the Ronald Reagan Earth day fair were very successful as 12 new staff registered for the program; increasing enrollment will catalyze a general interest in sustainability matters at the medical facility. These liaisons will work within their department to reduce the environmental impact of the hospital. We will be conducting another focus group to assess the status of the program which will hopefully have a more

significant influence in the future as it gains more traction.

## **Conclusion**

Having the opportunity to help increase the awareness and improve the education concerning sustainability of the staff at one of the best medical systems in the nation was a true honor for the Hospital Team. We originally wanted to tackle one of the larger sustainability areas of the hospital like food or energy, but due to the stringent constraints and regulations it was not possible. Instead, we were able to improve the educational module that the 2014 Hospital Team had created. In order to improve the module, we surveyed hospital staff from not only the Ronald Reagan UCLA Medical Center, but the Santa Monica Hospital as well. From the data we collected, we were able to update the module in a way that would provide an effective learning experience to the staff.

In addition to updating the module, we were able to increase the number of members in the SLP from 30 to about 42 members, a 40% increase. We understand that sustainability takes a different meaning in different work areas within the hospital so the program allows its members to make sustainable change within their respective departments. Teresa plans to have consistent meetings with the liaisons throughout the year to evolve the program's mission to meet the staff members' work environment. Our only changes for Teresa include keeping up with the liaisons in their efforts to become more sustainable in their work. We would also like to see the education module implemented more among the staff throughout the hospital system since it is tailored to hospital sustainability. Recommendations for a future hospital team would include creativity in trying to get around the strict regulations that the hospital has and not be discouraged by these same restrictions. They should ensure that the module is being updated with current information

and perhaps give something to those that complete it. Finally, they should seek to continue increasing the size and scope of liaisons in the SLP, which is a powerful agent for sustainable changes at the hospitals.

## **Appendix**

### **Literature Review**

#### ***Introduction:***

This year's Hospital action research team is working with Teresa Hildebrand, the sustainability programs manager at UCLA Health, to reduce the environmental impact of the Ronald Reagan Medical Center. The UCLA Health medical facilities are an important aspect of the UCLA community and, in reaching UCLA's sustainability goals, it is essential to make sure that the health center is on board. In order to make sure our action research is relevant and impactful, we have researched a number of different aspects of sustainability with regards to the hospital and looked at previous hospital ART projects.

#### ***Transportation:***

In the UCLA Health website under Sustainability Efforts, there is a Transportation tab that leads to a list of different transportation options available to those who work at the different UCLA Health locations. Some of the transportation choices listed are to transport staff from one health location to another and other services are to encourage staff to choose green ways to get to work.

Services that transport staff from one facility to another include biking, carpooling, and a staff shuttle service. Listed on the website are the locations where staff can locate bike racks,

repair shops, and bike pumps. In addition, there is information about a bike rental that is currently only available in Santa Monica and Venice. However this service is planning to set up stations in Westwood. The staff shuttle service allows staff to go between different health locations with shuttles running every 15 to 30 minutes. On the website there is a detailed schedule of the departure times and destinations of three shuttle vans (“Sustainability” 2016).

For staff members looking to find alternative options to driving from home to work and vice versa, biking is an encouraged option as well as carpooling and vanpool services. For those interested in carpooling and vanpooling, they are given information for The Santa Monica Campus Rideshare Program and are directed to the UCLA Transportation website where more commuting resources can be found. Here information about public transportation can be found as well as the Zimride website where vanpools and carpools can be found and joined (“Sustainability” 2016).

Although these options are great for those who work during the daytime, there are few to no transportation resources for those who work late at night or all night. The Hospital Team could potentially survey those who work late at night with the purpose of finding out what their modes of transportation are and if these staff members would be interested in the creation of a late night or day transportation system.

***Food:***

Many modern day hospitals, in particular those as large and prestigious as Ronald Reagan, offer an impressive food selection. Given the large volume of food necessary to maintain a staff, it is important that hospitals turn to healthy and sustainable food options. It is difficult for a medical facility as large as Ronald Reagan to provide high quality, sustainable

food to all of its patients and employees. They have adopted a green apple symbol which symbolizes the healthier food choices. This can make people aware of the nutritional value of the food they consume at the hospital (Hewitt 2010). This system could potentially be expanded to include a wider variety of signage that offers people more detailed information about the sustainability of different food options.

Another important consideration when overseeing the movement of such a large quantity of food is to have an effective composting program in place. Wesley Woods Hospital and Emory University Hospital have taken major steps towards establishing a composting program. WWH, a 100 bed hospital, diverted 5,000 pounds of food in only the first month of implementing the new system (Wrobel 2010). Ronald Reagan has a much larger capacity boasting about 520 beds. The amount of food that could never enter the hospital dumpster is astounding and well worth the time invested in implementing such a program.

***Waste:***

The goal of the University of California, Sustainable Practices Policy, is to be Zero Waste by the year 2020, with a 95% or higher waste diversion (“UCLA Zero Waste Plan” 2012). The UCLA Health system has begun to work towards this goal by involving the cooperation of the Sustainability Committee, Sustainability Programs Manager, and by the creation of a Waste Taskforce, which will play a critical role in moving the UCLA Medical Centers in the right direction towards Zero Waste.

According to the “UCLA Zero Waste Plan,” in 2011/2012, 81% of all Health System waste was placed in the landfill, while only 19% was diverted (Markham 2012). In even more detail of the waste diversion breakdown, 34% was commingled recycling, 30% was HIPAA

paper materials, 24% was cardboard, 8% were pallets, and only 5% was food waste composting (Markham 2012). Several initiatives have been adopted by the Health System in order to aim towards the ambitious Zero Waste Plan by 2020. Some of these initiatives include: composting in the hospital to reduce the amount of waste going directly to the landfill, the CareConnect Electronic Records system, which is an electronic health record system and may potentially reduce the need for printing, the elimination of Polystyrene packaging from dining and replaced by an alternative made of sugarcane, and the Rejected Linen Program, which sells torn or damaged linen to a vendor who then recycles the cloth, thus reducing landfill waste (Markham 2012). Although UCLA has been a leader in sustainability measures, improvements in waste management and recycling initiatives are imperative in order to achieve the goal of Zero Waste by 2020.

***Water:***

According to the UCLA Health sustainability website, two main efforts have already been made to reduce the water used in the hospital. At both the Santa Monica Medical Center and the Ronald Reagan Medical center, areas of grass have been replaced with turf and low-water landscaping. It is estimated that through this effort, 57,000 gallons of water are being saved each year. After the completion of the artificial grass project, over 5,200 square feet of grass will have been replaced in public areas on the medical center premises (“Water” 2015).

Additionally, at the Santa Monica Medical Center, the UCLA Health Facilities Department has recently installed a “zero discharge” cooling tower water system. Cooling towers use water to cool air for air conditioning systems, but produce blowdown, or water with high dissolved solids concentrations. Typically this blowdown is discharged along with sewer water

and needs to be replaced with fresh water (“Zero Blowdown” 2012). This new “zero discharge” installation is able to process and recycle the blowdown, saving an estimated 10,000 gallons of water per day (“Water” 2015).

At the Dartmouth-Hitchcock Medical Center in New Hampshire, a number of measures were taken to cut water. They implemented a Domestic and Kitchen Water Efficiency Measure -- installing low flow toilets, urinals, and faucets. They implemented a more precise temperature monitor to prevent excess water from being wasted to regulate temperature. And they redesigned their reverse-osmosis water purification system to recirculate rejected water. Through these efforts, the Dartmouth-Hitchcock Medical Center saves approximately \$100,000 annually (Chaput 2014).

***Energy:***

According to UCLA’s health sustainability page, energy upgrades are already in the works at Ronald Reagan hospital. To date, they mainly focused on upgrading the lighting to be more efficient. This occurred at both Westwood’s medical plaza as well as the Medical Center located in Santa Monica. The UCLA Medical Center lighting retrofit has a projected annual energy savings of 460,000 kWh, and the 200 UCLA Medical Plaza lighting retrofit has a projected annual energy savings of 780,000 kWh (Energy, 2015). However, they stated on their website they are continuously looking for new and better ways to cut the use of energy.

According to the University of California Annual Regents Report of sustainable practices, lots of efforts have been made to make all the UC’s more sustainable, including a heavy emphasis on carbon neutrality the past few years. Currently, all campuses are recording emissions through tracking of electricity purchases, onsite combustion of fuels, and are required

to follow the guidelines set by “The Climate Registry’s General Reporting Protocol (University of California, Office of the President, 2013).” Also, starting in 2013, all UC facilities are now subjected to be under the cap-and-trade program. This insures that all will lowering the amount of energy expended. In the first year, every facility will be receiving all the allotted credits. Each year after, a 2% reduction must occur in overall GHG CO2 emission (University of California, Office of the President, 2013)

As far as LEED certification goes, UCLA Ronald Reagan Medical Center is currently not certified (Sustainability, 2016). This leaves a lot of room for potential improvement and upgrades of UCLA Ronald Reagan Medical Center. New policy goals set recently is every new buildings must be built to a minimum LEED Silver Rating. Also, if Ronald Reagan wants to upgrade any energy fixtures to a cost of 5 million or more, it must achieve a LEED certified rating. In addition to that, all new renovations must be at least 20% better than what is set by the California Building Code (University of California, Office of the President, 2013). It would be valuable to take a look at UCI’s medical center and UC Davis School of Veterinary Medicine Instruction Facility, as their LEED certification is the highest at platinum. The School of Veterinary Medicine includes natural ventilation that cools the building through thermal and humidity sensors. A notable feature they have is a night flush ventilation to release the heat accumulated in the daytime and release it, replacing it with cool, night air. This cools down the entire structure to moderate the temperature the next day. The UC Irvine Medical Building implemented a very inclusive construction material reduction strategy as well as the use of passive ventilation and cooling (Univeristy of California, 2012).

***Conclusion:***

Past studies and reports shed light on the numerous ways that a facility can become greener as well as provide insight as to which areas of sustainability have the most room for improvement. We hope to analyze Ronald Reagan's current practices to decide how we can best boost the hospital's overall sustainability. We will bounce ideas around amongst ourselves as well as with our stakeholder to develop an effective project with lots of potential to create a more eco-friendly facility.

***Literature Review Works Cited:***

Chaput, Philip. "Dartmouth-Hitchcock Medical Center." *Water Efficiency Case Studies*. New Hampshire Department of Environmental Services, 2014. Web. 29 Jan. 2016.

"Energy." *Sustainability Efforts*. UCLA Health, 2015. Web. 29 Jan. 2016.

Hewitt, Alison. "Navigating the Cafeteria for Health." *Health + Benefit*. The UCLA Newsroom, 2010. Web.

Markham, Jerry, and Ashley Angulo. *UCLA Zero Waste Plan*. Rep. Los Angeles: Rethink Recycle, 2012. Print.

"Sustainability." Transportation: UCLA Health. N.p., n.d. Web. 29 Jan. 2016.

"Sustainability." *UC's LEED-certified Projects*. UC Regents, n.d. Web. 29 Jan. 2016.

University of California, comp. *Annual Report on Sustainable Practices*. Auckland, N.Z.: Auckland Transport, 2012. *University of California Regents*. 2012. Web. Jan. 2014.

University of California, Office of the President, comp. *ANNUAL REPORT ON SUSTAINABLE PRACTICES 2013* (2013): n. pag. *University of California Regents*. UC Regents, Jan. 2014. Web. Jan. 2016.

"Water." *Sustainability Efforts*. UCLA Health, 2015. Web. 29 Jan. 2016.

Wrobel, Sylvia. "Hospitals turn food waste into compost." *Campus News*. Emory report, 2010.  
Web.

"Zero Blowdown Technology (ZBT) for Cooling Towers: A 'Green' Technology for Water Use  
Reduction." *Innovation in Water Management*. ProChemTech International, Inc., 2012.  
Web. 29 Jan. 2016.

Figure 1. Information from surveys on staff concern with sustainability

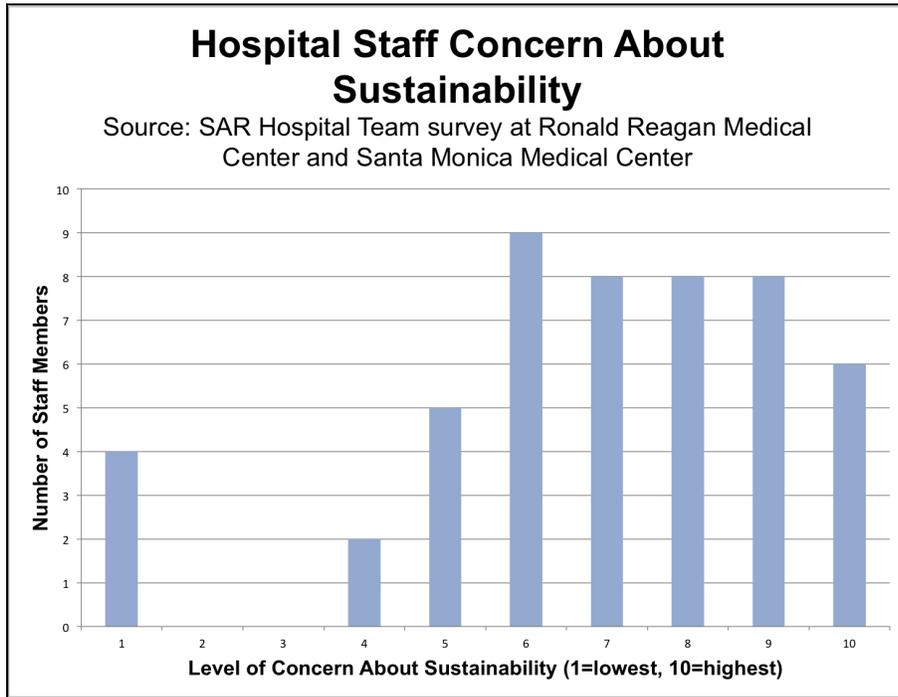


Figure 2. Information from surveys on staff preferred method of receiving information

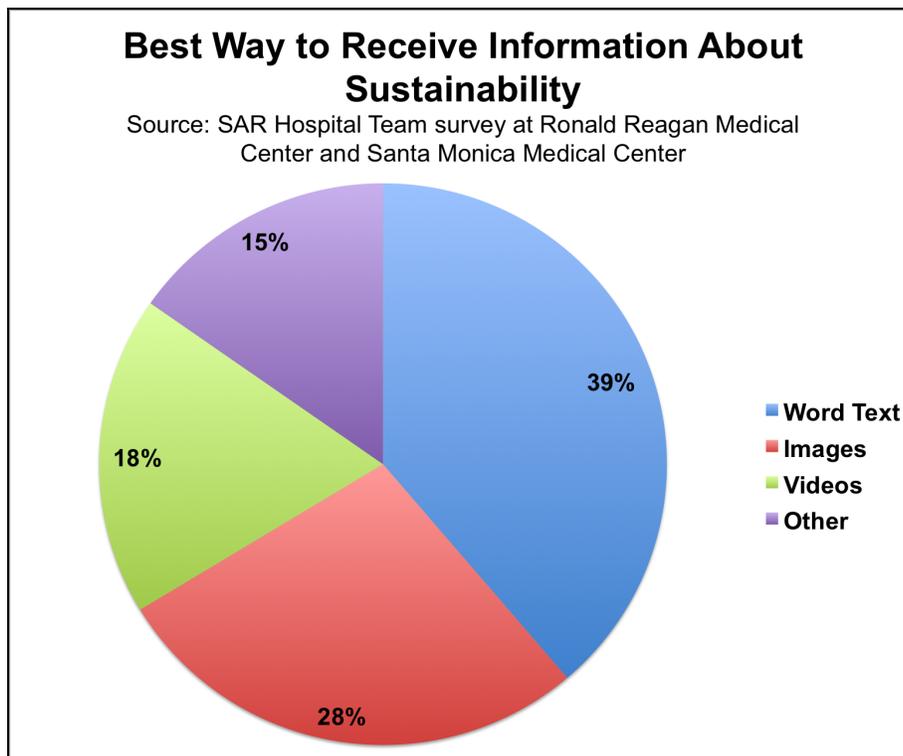


Figure 3. Graph indicating increase in SLP enrollment from beginning to end of project

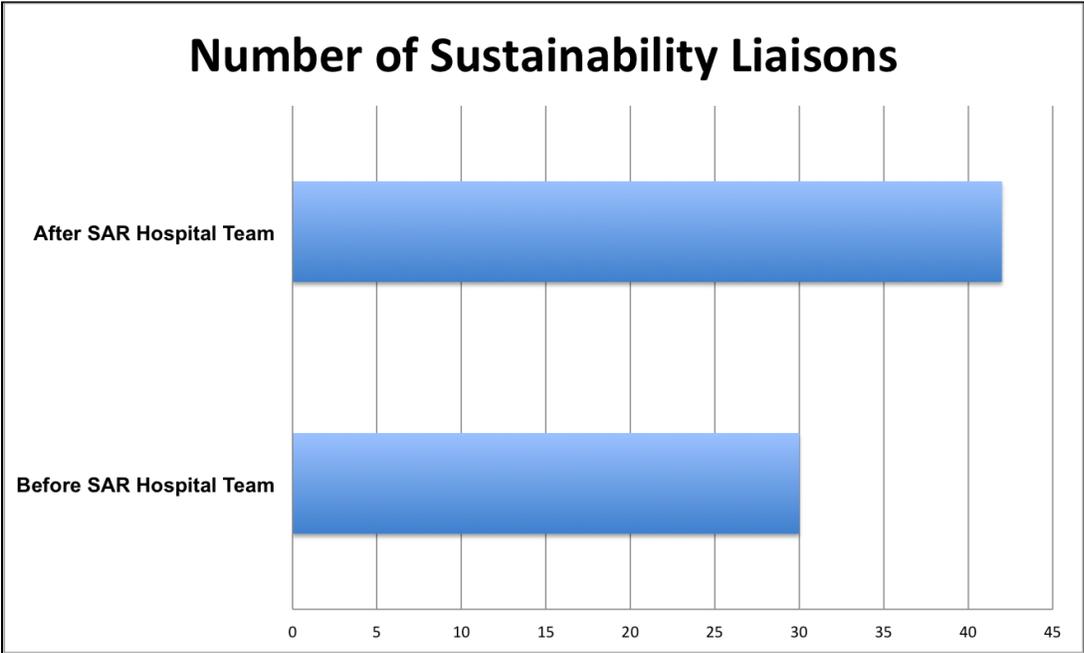


Figure 4. Sustainability survey collected from hospital staff

## Santa Monica Hospital Sustainability Survey

1. Rank your concern for sustainability at Ronald Reagan Medical Center.  
(1: least concerned 10: Most concerned)

1    2    3    4    5    6    7    8    9    10

2. Have you heard about the Sustainability Liaison Program?

Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, how?

3. How likely are you to be a part of a sustainability initiative at Ronald Reagan?  
(1:Very Unlikely 10: Sign me up!)

1    2    3    4    5    6    7    8    9    10

4. How do you like to receive information about sustainability? Check all that apply

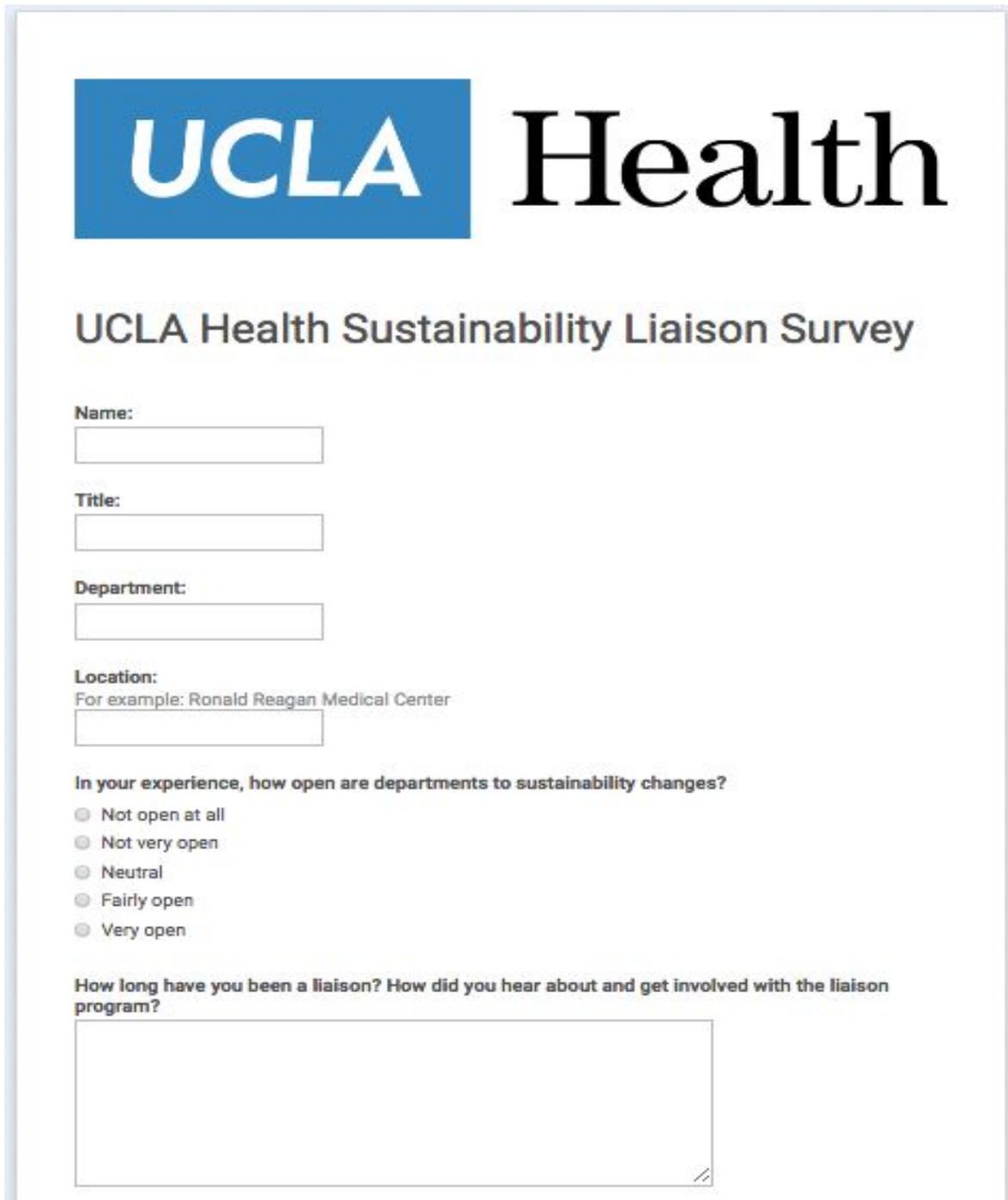
Videos	Word Text	Pictures	Audio	Other?

5. Additional Comments/Recommendations?

Thank you! Your feedback will help us improve the Hospital's sustainability!

 **ESLP**  
Education for Sustainable Living Program

Figure 5. Sustainability survey collected from Sustainability Liaisons



**UCLA Health**

## UCLA Health Sustainability Liaison Survey

**Name:**

**Title:**

**Department:**

**Location:**  
For example: Ronald Reagan Medical Center

**In your experience, how open are departments to sustainability changes?**

- Not open at all
- Not very open
- Neutral
- Fairly open
- Very open

**How long have you been a liaison? How did you hear about and get involved with the liaison program?**