

# pathways



# welcome.

Welcome to the 2016 Alternative Spring Break literary magazine, Pathways. It is practically impossible to capture an entire year's worth of ASB (34 spring trips, and our expanding Alternative Fall Break program) in so few pages, particularly given that a record number of students (over 400) participated in ASB programs over the course of the 2015-2016 school year. The student research papers that follow offer only a small sample of our year's efforts, yet they speak volumes about our participants' passion for service learning. Through generous assistance from the Public Service Programming Board, we were lucky to fund research in Seattle, in San Francisco, in Guatemala, and in San Juan, Texas, to name a few places.

As a final note, I feel compelled to thank every person who helped ASB this year, from our wonderful executive board, to our 68 Site Leaders, to our 300-odd participants, countless community partners, alumni, and UVA faculty and administrators. Serving as President of ASB has been the most rewarding experience of my college career. I am humbled and grateful to be part of such a wonderful organization.

All the best,  
John Connolly  
ASB President 2015-2016

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# Joshua Tree Vitality in the Colorado and Mojave Deserts

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Joshua Tree, CA

Joshua Tree National Park is situated at the intersection of the Colorado and the Mojave Deserts in Southern California. Straddling the two deserts, the park displays unique diversity of plant and animal life, as evidenced by the thousands of different species that can be found within its confines. Since its establishment as a National Monument in 1936 and then as a National Park in 1994, Joshua Tree has welcomed visitors from around the world. Rich in cultural history, the 800,000 acres that comprise Joshua Tree has been inhabited by humans for over 5,000 years. The earliest known people to have lived there were the Pinto Native Americans. In the 1800's, many Americans traveling west in search of gold settled in Joshua Tree. Thinking about this fact might make one wonder, how is it that people have survived for so long in such a vast, arid desert? Surely this is a miraculous feat. What is still more miraculous than this is that there are millions of plants surviving and thriving in the middle of the Colorado and the Mojave Deserts, the most prominent of which is the majestic Joshua Tree. The Joshua Tree, and other desert plants, obtain their water through the amazing phenomenon of capillary rise. Interestingly, the Joshua Tree cannot be found anywhere in the Colorado Desert. It is only able to survive in the Mojave Desert. In this paper, I will analyze the physical properties of the Joshua Tree, relate those physical properties to capillary rise, and quantitatively assess the viability of the species in the Colorado versus the Mojave Desert.

There are nearly 750 known vascular plant species in Joshua Tree, as well as many trees, shrubs, cacti, and of course, the iconic Joshua Tree itself. This paints an incredible landscape for any and all visitors to the park. What is truly remarkable is the stark contrast that can be seen as one crosses the border from the Colorado into the Mojave Desert. This contrast is characterized primarily by changes in plant and animal life. Additionally, Joshua Tree shows an elevation range of over 4,000 feet, encompassing three ecoregions of the southwest. It is clear to most that plants have some internal mechanism for retrieving water from the ground. Clearly, plants do not possess motor skills necessary to bend down and scoop up some water from a river or a lake and then drink it, nor do they possess the ability to seek shelter from the sun during the hottest parts of the day. How is it that so many plant species can survive in this part of the world? Capillary rise is the means that plants use to obtain water in order to support their cells' functions as well as cool off on a hot day. Many factors play a role in the ability of a plant to use capillary rise to its advantage. Some of these factors include elevation, pressure exerted on the plant, the diameter of the capillary, the height of the plant, and many more. What is of particular interest to me is why the Joshua Tree is able to survive and thrive in the Mojave Desert but cannot be found anywhere in the adjacent Colorado Desert.

An understanding of capillary action begins with an understanding of the fundamental physics governing our world. Simply stated, capillary action is the ability of a fluid to flow through a narrow passage without the assistance of external forces. Remarkably, capillary action in plants is able to fully overcome the force of gravity, without any external force being applied. The secret to the success of capillary action is the ability to maintain a pressure difference across a curved fluid interface, such as the interface between water and air. This pressure difference is hugely significant for the plant. It can be described by the following partial differential equation, known as the Young-Laplace Equation:

$$\Delta p = \gamma \nabla n \quad (1)$$

Where  $\Delta p$  is equal to the change in pressure across the interface,  $\gamma$  is the surface tension and  $\Delta n$  is a measure of the spatial curvature. For our purposes, this partial differential equation can be reduced to the following simple expression:

$$\Delta p = \gamma * \left( \frac{1}{R_1} + \frac{1}{R_2} \right) \quad (2)$$

Where  $R_1$  and  $R_2$  are the radii of curvature. This equation is satisfying because it shows that if the surface has zero curvature, a pressure difference cannot be maintained. This result is consistent with our intuition that pressure differences do not exist across flat planes. In order to determine the height to which a fluid can rise in a capillary tube, one can use the following form of the Young-Laplace equation

$$\Delta p = \rho gh - \gamma \left( \frac{1}{R_1} + \frac{1}{R_2} \right) \quad (3)$$

// There are nearly 750 known vascular plant species in Joshua tree, as well as many trees, shrubs [and] cacti...

where  $p$  is the density of the fluid,  $g$  is the gravitational constant and  $h$  is the height that the fluid rises in the capillary. This equation gives us insight into the conditions and properties that affect capillary rise. For example, density of water is influenced by the temperature, the radii of curvature are related to the diameter of the capillary, and the pressure difference is related to the elevation.

At a certain height, the pressure difference will lead the liquid water to vaporize and move up the plant in the gas phase, a process known as cavitation. Calculations were performed in order to determine the height at which cavitation occurs for Joshua Trees at different elevations in the park. The monthly average temperature was found and used to determine the average vapor pressure on water (216.2 mmHg). The atmospheric pressure was determined over the range of elevations found in Joshua Tree National Park. The surface tension between water and air was taken to be 0.065 N/m. The acceleration due to gravity was taken to be 9.8m/s<sup>2</sup>.

The capillary diameter of a Joshua Tree was estimated as 20 $\mu$ m. The following plot shows the relationship between elevation and height of cavitation in Joshua Trees.

This figure shows that as elevation increases, height at which cavitation occurs decreases. Elevation in the Colorado Desert ranges from approximately 500-2000ft that of the Mojave Desert ranges from 2500-6000ft. According to the calculated data, Joshua Trees found in the Mojave Desert would undergo cavitation at lower tree heights than their hypothetical counterparts in the Colorado. These results are not sufficient to conclude why Joshua Trees are found only at the higher elevations in the Mojave Desert.

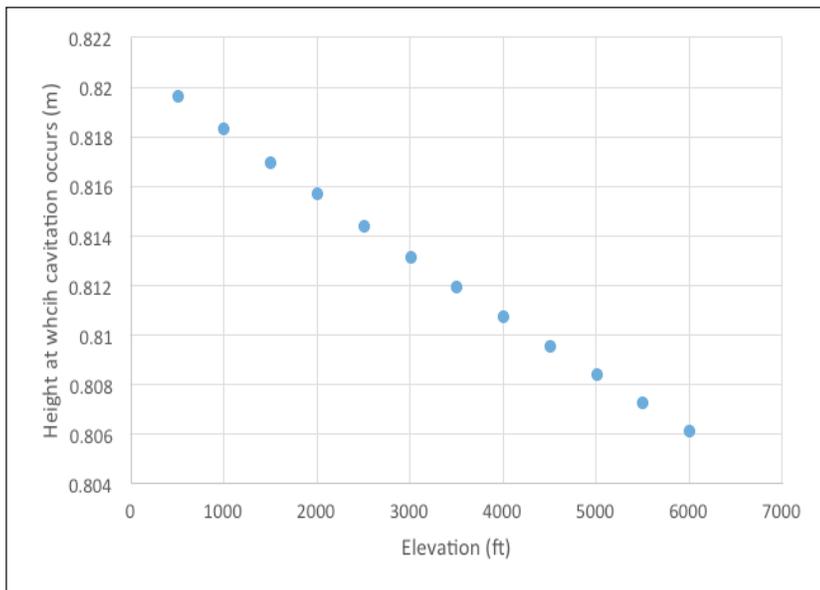


Figure 1. Height of cavitation vs. elevation

Capillary rise calculations do not lead to a definitive conclusion as to why the Joshua Trees do not grow in the Colorado Desert. However, the reason behind this observation is believed to be related to the temperature, and therefore the atmospheric pressure, at higher elevations. According to Thomas Hender, a botany specialist working at the park, the Joshua Trees prefer the cooler temperatures found at higher elevations. Mr. Hender also explained that, tragically, the Joshua Trees were growing scarcer at lower elevations each year due to global warming. As the atmosphere

traps more heat, the ground, particularly the dry desert

floor, increases in temperature rather rapidly. This increase in temperature is magnified at lower elevations, especially in the desert valleys found in Joshua Tree National Park and the surrounding areas. The Joshua Trees growing at lower elevations are finding it difficult to survive at these lower elevations, and as a result, the bulk of their population has moved up to higher elevations in recent years. Unfortunately, one day the Joshua Trees will require a higher elevation to survive than in the desert. At this point, the Joshua Trees will likely die out. This sobering fact serves as a reminder that our efforts to protect the beauty of our earth in national parks will be futile if we do not change our actions outside of the park as well. exists in the desert. At this point, the Joshua Trees will likely die out. This sobering fact serves as a reminder that our efforts to protect the beauty of our earth in national parks will be futile if we do not change our actions outside of the park as well. ►►►

## Works Cited

Middlemen, Stanley. An Introduction to Fluid Dynamics. New York: Wiley, 1998. Print.  
 Nave, R. Boiling Point Variation. Hyper Physics. Web. Retrieved on: 26 March 2016.  
 U.S. Department of the Interior. Joshua Tree National Park. National Park Service. Web. Retrieved on: 25 March 2016.  
 U.S. Forest Service Database. Yucca brevifolia. Web. Retrieved on: 22 March 2016.

# El Yunque National Forest: a Social, Economic, and Political View

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El Fajardo, Puerto Rico



The sign welcoming visitors to El Yunque National Forest. Notice it reads "U.S. Department of Agriculture". All photos by Jack Totty.

The United States contains 155 National Forests comprising of 190 million acres or 8.5% of the total land area of the US. El Yunque National Forest is a special exception as it is the only rainforest in the US. Granted, El Yunque is on the small island of Puerto Rico, but Puerto Rico is a territory of the US and is extremely dependent on the US government. This dependence greatly shapes the Puerto Rican society, economy, and political structure. It also shapes the way El Yunque is used and viewed in the eyes of Puerto Ricans. Puerto Rico is referred to as "La Isla Encantada," which translates to "The Enchanted Island." Puerto Rico is called this because it was formed by volcanic activity during the Triassic Period. Therefore, the island was formed with no connection to any other piece of land, so the animals on the island are there because they swam, floated, or flew there. The largest mammals on the island are rats, bats, and mongoose and the only snake is the Puerto Rican Boa.

The term "Enchanted Island" refers to the fact that there are no poisonous animals on the island.

However, what El Yunque lacks in fauna, it makes up for in its diverse flora. El Yunque is found 3,533 feet above sea level in the Luquillo Mountains on the east coast of Puerto Rico. El Yunque receives over 200 inches of rainfall on average per year and is known for its vast biodiversity. It is home to thousands of native plants including 150 species of fern and 240 tree species with 88 being rare species and 23 exclusively found in El Yunque. Due to the amount of plants in the forest, when rain falls, it is collected on the plants and evaporates back up into the air, causing clouds and rain to be constantly above the rainforest.

El Yunque is different than most rainforests around the world for reasons other than the lack of big mammals and poisonous species. There are no indigenous people remaining in El Yunque as there are in many rainforests across the world; especially in South America. It is also a very Americanized rainforest, as one might imagine. It has a learning center and a "RentARanger" program and receives more tourists than most rainforests. Per USDA statistics, El Yunque sees about 1.2 million visitors per year, making it one of Puerto Rico's largest tourist attractions. 500,000 of these visitors are non-Puerto Rican tourists, mostly coming from the eastern coast of the US. 34% of the forest's visitors make over \$75,000 per year, meaning the forest sees mostly white collar tourists. These statistics differentiate El Yunque in ways that suggests that Puerto Ricans rely much less on their rainforest than people in other countries such as Brazil on the Amazon or other Asian countries. A lot of money goes into preserving the forest and a lot of money goes into features of the forest such as the visitor center aimed at tourism, however, the forest charges a small fee for entry and even restricts the number of visitors per day. In fact, our volunteer coordinator in Puerto Rico expressed frustration on the ongoing fight between "tour guides" and "volunteer coordinators." He explained how if we stayed in the forest too long, he would be fined despite paying the entry fee. He told us how one needs a tourism license to bring groups into the forest. This limits tourism as hundreds of students come to Puerto Rico each year to do service trips such as ours. The Puerto Rican government is limiting its tourism and profits of the forest because of a license. The forest is losing money when most other tropical countries aim to profit off of natural beauty they have due to high levels of tourism. The level of tourism is just as high, if not higher due to the ease of access to Puerto Rico for Americans, but they do not make much of an effort to profit off of this potentially lucrative part of the country. This leads to the discussion of independence and the Puerto Rican economy, which plays a leading role in the impact on Puerto Ricans and their interaction with the forest.



One of the 150 species of fern in El Yunque. The plants are much larger here than anywhere in the U.S.

person to get their food or clothes from a US supported store rather than go and produce it from the resources available in the forest. Another example is the amount of low income housing that exists in Puerto Rico. My group saw dozens of low income developments while driving along the highway or to the forest in our week on the island. The US provides this housing and this discourages Puerto Ricans from building homes on the island, and especially near the rainforest to take advantage of the resources it can provide. This limits production and encourages dependence on the United States, strengthening the paradox between the advantages and disadvantages of Puerto Rican independence. Puerto Ricans have also stopped producing and exporting sugar cane and coffee. The island developed a plantation economy that specialized in growing these two crops which generated a lot of income for the Spanish government. There is still plenty of space on the island where this could be taken advantage of, but the dependence on the US once again limits this potential economical strength.

Puerto Rico was once independent, but that was before Christopher Columbus discovered the small island. On November 19, 1493, Columbus claimed the island from the Taíno people who were indigenous on the island. This was the end of Puerto Rico's independence as we know it. Before Columbus claimed the island, the Taíno people were developing agriculture and thriving on their own using the island's resources. El Yunque was admired and heavily relied upon by the Taíno. They believed the spirit "Yukiyu" protected them from storms and other evils from atop of the Luquillo Mountains. They called the mountains "Yukeh" which means "White Lands" due to the year round cloud cover. <sup>8</sup> The forest used to be much more influential and important to the people of the island. Granted, that was before 1493, but even after that, the Spanish found gold in the forest and relied on the forest for food, water, and shelter. In 1898, the US gained governance over the island of Puerto Rico through the Treaty of Paris resulting from the SpanishAmerican War. <sup>9</sup> Ever since the US gained control, it has been feeding money into the Puerto Rican government to keep it afloat, causing both the forest and all of the natural resources and potential incomegenerating land of Puerto Rico to become virtually irrelevant. The lack of influence and dependence on the rainforest is what makes El Yunque somewhat of an anomaly from the rest of the world's rainforests despite its similar characteristics.

Puerto Rico is heading for an inevitable default as their economy is in a state of emergency. The public debt is \$73 billion, unemployment is around 14% and a staggering 46% of the islanders live below the poverty line. This has led to arguments regarding its dependence on the United States. It is a hot debate in Puerto Rico as to whether or not it should be its own state, completely independent, or remain a US territory. Many argue that if Puerto Rico became independent, it would crash and burn as it is already on the brink of default and relies on Washington more than ever. However, some believe that independence is the only thing that will save the economy as people will be forced to produce, meanwhile and creating and finding employment. The independence debate relates to El Yunque as well. The fact that the US gives so much money to Puerto Rico drives down any incentive to produce and take advantage of their natural resources to create a healthy economy. El Yunque is a great example of this flaw. Puerto Ricans do not use the rainforest to their advantage economically or in terms of its vast resources. It is much easier for a



An otherwise clear day sees heavy cloud cover over the distant Luquillo Mountains and El Yunque National Forest.

Puerto Rico's El Yunque National Forest is the United States' only rainforest, but the forest is not utilized as much as other rainforests around the world. This may be because of the failing economy that results in financial dependence on the United States, which kills potential incentives for Puerto Ricans to produce and use what the rainforest can offer. The forest has many flaws as it has become more and more of a tourist attraction such as the limitations on the number of visitors and the required license to bring a group into the forest. These flaws are likely a direct result on the lack of independence Puerto Ricans have and the lack of economic responsibility they take. Puerto Ricans live a consumer lifestyle rather than a producer one as they feed off of the money poured in from Washington. If Puerto Ricans want to improve their economy, dependence is not the answer; becoming producers and letting natural resources have more of an influence on their lives is part of the solution and if action is not taken soon, the Puerto Rican economy will default and it will greatly diminish any chance of becoming dependent anytime soon. ▶▶▶

“ Puerto Rico is referred to as 'La Isla Encantada', which translates to 'the enchanted island'.

## Works Cited

- "El Yunque National Forest - Home - US Forest Service." 2011. 22 Mar. 2016 <[http://www.fs.usda.gov/detail/elyunque/home/?cid=fsbdev3\\_043038](http://www.fs.usda.gov/detail/elyunque/home/?cid=fsbdev3_043038)>
- "El Yunque National Forest - About the Forest - US Forest ..." 2011. 22 Mar. 2016 <<http://www.fs.usda.gov/main/elyunque/about-forest>>
- "Forest Plan Assessment - USDA Forest Service." 2014. 23 Mar. 2016 <[http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stel-prd3794279.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stel-prd3794279.pdf)>
- "4 Reasons Independence Is the Right Path for Puerto Rico." 2015. 23 Mar. 2016 <[http://www.huffingtonpost.com/marugonzalez/4-reasons-independence-is-the-right-path-for-puerto-rico\\_b\\_7907434.html](http://www.huffingtonpost.com/marugonzalez/4-reasons-independence-is-the-right-path-for-puerto-rico_b_7907434.html)>
- "Masterpiece Theatre | American Collection | Almost a ... - PBS." 2002. 23 Mar. 2016 <<http://www.pbs.org/wgbh/masterpiece/americancollection/woman/timeline.html>>
- "Spanish-American War - Fasttrack Teaching Materials." 2009. 23 Mar. 2016 <[http://www.fasttrackteaching.com/burns/Unit\\_6\\_World/U6\\_Spanish\\_American.html](http://www.fasttrackteaching.com/burns/Unit_6_World/U6_Spanish_American.html)>
- "Masterpiece Theatre | American Collection | Almost a ... - PBS." 2002. 23 Mar. 2016 <<http://www.pbs.org/wgbh/masterpiece/americancollection/woman/timeline.html>>
- "El Yunque Must Be A Wonder Of Nature - WordPress.com." 2014. 23 Mar. 2016 <<https://elyunquewonderofnature.wordpress.com/>>
- "Masterpiece Theatre | American Collection | Almost a ... - PBS." 2002. 23 Mar. 2016 <<http://www.pbs.org/wgbh/masterpiece/>>

# Embracing Efficacy: The Effect of Priming on Volunteer Retention and Efficacy

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## I. Introduction

Why does the world need volunteers? Some organizations need volunteers in order to bring shelter to people in need, restore an area that has been devastated by natural disasters, or give students the tutoring services they need in order to succeed in school, all of which are just the beginning of the reasons why volunteers are demanded. Volunteers are used to accomplish a wide variety of tasks that would not otherwise be feasible through using hired labor, which can sometimes cost as much as \$30 per hour. Habitat for Humanity, for instance, is one of the many large organizations that demand volunteer services. In the year of 2014 alone, Habitat for Humanity International constructed 15,975 new homes for people around the world, rehabilitated 6,267, and overall finished a total of 104,291 construction sites ranging anywhere from new home building to home repairs. All of this, however, was only able to be done with the help of over 2 million volunteers who spend hours and hours of their time working for free to make the world a better place.

Habitat for Humanity, among many other organizations, is only able to continue their endeavors because of the work of volunteers. The Salvation Army, American Red Cross, and the YMCA are all organizations that bring huge amounts of benefit to the communities they serve, yet are only able to make the impact they do because of volunteers. With these, and many more, organizations in need of volunteers, it is easy to see that the more people we have volunteering, the better. And yet even knowing all of this, the US only has a 25% rate of people volunteering each year. Looking individually into states, you can see that the issue is worse than it seems. Louisiana, for example, only has a 17% volunteering rate and each volunteer averaging 18 hours per year. Even more startling, only 54% of volunteers return for recurring volunteering, leaving the population of people volunteering much smaller than what it could be.

This experiment was designed to scientifically test one facet of the factors that go into an individual's decision to volunteer in hopes of finding methods that could increase an individual's likelihood of becoming a "returning volunteer" and increase the rate of volunteer retention. In this experiment, University of Virginia (U.Va.) students participating in the Alternative Spring Break (ASB) program, a program that takes students on servicelearning trips across America and other countries such as Puerto Rico and Nicaragua, were sampled. Participants were asked to read a compilation of articles prior to their trip that were designed to prime the volunteer to feel empathy for the populations that they were serving. After the trip was finished, participants were then asked to complete a survey that compared volunteer retention and efficacy between the experimental group and the control group. It was found that, on average, an individual primed to feel empathy for the communities they serve are more likely to volunteer again in the future, however some results were found to be statistically insignificant.

## II. Methodology

This experiment was conducted under the premise that many individuals volunteer without ever truly realizing the beneficial impact they have on the community or people they serve. This idea has sparked the recent trend of "service-learning" where individuals both volunteer as well as reflect on many different aspects of their experience, however that is only one of many ways individuals can see the real impact their work is making. Priming was chosen as the experimental task because it is a simple and easily replicable task. It creates or strengthens the bridge between a volunteer's actions and the perception of their impact on the community or the individuals they serve. Finally, priming was chosen as the task because it is easily implementable and expandable; although there are other ways of connecting a volunteer with the community (i.e. reflection, experiential learning), priming is a much more costeffective method for large groups of individuals.

### *Sampling*

The population samples were University of Virginia students participating in Alternative Spring Break (ASB). ASB is a program at universities across America that takes students away from the typical Spring Break at the beach and instead has them participate in volunteering trips. These students go to places ranging from Tuscaloosa, AL to Drake Bay, Costa Rica, working with a variety of programs such as Habitat for Humanity, Nashville Tools For Schools, and Proyecto Azteca. Just this year, ASB at U.Va. had a total of 34 different trips with over 370 volunteers.

For selecting a sample, all trips that were nondomestic (Luquillo, Puerto Rico; Virgin Islands; Drake Bay, Costa Rica; Nicaragua; Xela, Guatemala) as well as the Virginia Road Trip were excluded from the random sample. This was done in order to have the sampled volunteers' experience be more similar to what an individual would experience in an average day of weekly volunteering. After taking out ineligible trips, eight trips were randomly chosen to have volunteers selected to participate in the study. After being chosen, these volunteer trips were coded in order to keep all sensitive information anonymous. Samples were initially broken down by trips in order to control for differences between each trip. After randomly selecting eight trips, six volunteers were then randomly selected and then sorted into the different experimental groups (control and empathy priming). At the beginning of this study 48 volunteers were contacted, 19 filled out the presurvey before the deadline (25 total), and 17 filled out the postsurvey before the deadline (19 in total). Of the two participants who did not fill out the postsurvey in time, one was assigned to the control group and the other was assigned to the experimental group. In total, this study retained 17 participants from start to finish (demographic information outlined in the appendix).

### *Pre-Survey*

All participants were given an initial presurvey to fill out prior to receiving the experimental tasks. This presurvey included demographic information as well as a question that measured motivation and purpose behind the individual's decision to volunteer with ASB. Each answer was then translated to a 5 point scale, with items coded 1 were considered the most "selfish" and items coded 5 were considered the most "selfless". This question was intended to be used as a way to differentiate between motivation for volunteer and then tested to see if different types of priming has different effects on individuals who volunteer for varying reasons. Due to the small size of the sample, the "selfish" primer was not used as an experimental group and motivation was not used as an explanatory variable in the regression.

### *Experimental Task & Trip*

Individuals in the control group were asked to participate in their ASB as normal. Individuals in the experimental group were asked to read a compilation of three different stories of people's lives who had been changed due to the efforts of volunteers. One of these stories dealt with a Habitat for Humanity homeowner who was given the opportunity to live independent due to the organization's help, while the other two were about people who were helped by CASA (Care Appointed Support Advocates) for Children. The participants were asked to read and reflect on the articles as to how they might relate to their own lives and volunteer work.

### *Post-Survey*

After returning from their ASB trips, participants were finally asked to complete a postsurvey. This post survey measured the two different dependent variables: the rating of the trip overall and the likelihood of volunteering in the future. The second dependent variable was broken down into three different metrics, those being: likelihood of volunteering with ASB in the future, likelihood of making volunteering a part of his/her weekly routine, and whether or not that individual decided to volunteer for The Big Event (a program at universities across the US that facilitates college students spending one Saturday each year volunteering for the surrounding community).

These variables were chosen to be the dependent variables because they all measure different yet important parts of the decision of an individual returning to volunteer. For an individual to decide to volunteer consistently, he or she must consider the benefits from the experience of volunteering to be greater than the costs. Therefore, if a volunteer rates his or her experience high then they would be more likely to volunteer in the future. The other three questions directly address the question of whether or not that individual would like to volunteer again, two being in theory (ASB Repeat and Volunteer Weekly) and one being an actual decision (TBE Registration).

### III. Results

#### *Summary Statistics*

Overall, the only dependent variable that had a positive difference in means between the control and experimental group was the TBE Registration variable. The difference between means was .292. The other dependent variables had either no difference between the experimental and control group (ASBRepeat) or a negative difference (VolunteerWeekly:.97; Trip Rating:.097). One observation to take note of is that in the ASB Repeat dependent variable, the number of participants is only 16 as opposed to the previously stated 17. This is because one participant was dropped due to one of the participants being a 4th year, making that individual ineligible for participating in ASB for 2017.

#### *Regression*

In this experiment, four different regression models were used for four dependent variables. For all models, a linear regression was run with a hypothesis test in the following general format:

$$H_0 : X \leq 0$$
$$H_a : X > 0$$

where  $X$  corresponds to the coefficients on the primer explanatory variable. For all regressions,  $P$  is a dummy variable for whether or not a participant was subject to the experimental task and  $ASB$  is a fixed effects variable to control for the differences participants experienced during their ASB trip.

#### *a. The Big Event (TBE) Registration*

$$TBE_{ia} = P_{ia}\beta + ASB_a + \epsilon_{ia}$$

In this regression, the dependent variable was a binary variable of whether or not an individual would like to sign up to volunteer for The Big Event at UVA (answers coded as 1 corresponding to yes, answers coded as 0 corresponding to no), making this regression model a linear probability model. The primer had a positive effect on the dependent variable, with participants being in the primer experimental group being 63.2% more likely, on average, to volunteer for The Big Event than students in the control group. This resulted in a  $t$ -statistic of .0245, making the coefficient on the primer variable statistically significant at the 5% level.

#### *b. Likelihood of repeating ASB the following year*

$$R_{ia} = P_{ia}\gamma + ASB_a + \epsilon_{ia}$$

In this regression, the dependent variable was a discrete variable, with participants able to answer on a scale from 1 to 5 on the likelihood of participating in ASB the following year. The coefficient on the primer experimental group in this regression was negative, making the coefficient statistically insignificant.

#### *c. Likelihood of volunteering weekly in the near future*

$$V_{ia} = P_{ia}\delta + ASB_a + \epsilon_{ia}$$

This regression was another example of a discrete dependent variable with a scale from 1 to 5 on the likelihood of becoming a weekly volunteer in the near future. The coefficient on the primer experimental group in this regression was negative, making the coefficient statistically insignificant.

#### *d. Rating of ASB trip*

The final regression run was a discrete dependent variable with a scale from 1 to 5 on the rating of the ASB trip. The coefficient on the primer experimental group in this regression was negative, making the coefficient statistically insignificant.

$$T_{ia} = P_{ia}\theta + ASB_a + \epsilon_{ia}$$

#### IV. Conclusions & Extensions

From the inconclusive results of this study, we cannot confidently say that priming has a significant and positive impact on volunteer retention and efficacy. One restriction of this study is the lack of controlling for selfselection; because these students had already decided independently to participate in ASB, these participants are predisposed to participate in and enjoy volunteering more. Due to this, these results can be considered as a skewed representation of the overall population. The biggest restriction of this study was the number of participants. Due to financial and time constraints, the size of the sample was much smaller than anticipated as well as much smaller than what was needed to feasibly see significant results. This experiment should be the foundation of future research done on a bigger scale in order to better see the effects of priming on volunteer retention and efficacy.

One extension to this study could be differentiating between “selfish” and “selfless” reasons for volunteering. Due to the size of this study, only the priming that focused on empathy was able to be used. In future studies, priming should be broken down into two different experimental groups: ones dealing with “selfless” and ones dealing with “selfish” priming. Selfless primers could be ones dealing with triggering the public benefits of volunteering, such as people who have had their lives change from volunteers, whereas selfish primers could be ones dealing with triggering the private benefits of volunteering, such as the health benefits volunteers commonly realize. ►►►

#### V. Appendix

##### Demographic Information

| <u>Experimental Group</u> | <u>Count</u>        | <u>School</u>   | <u>Count</u>        | <u>Religion</u>              | <u>Count</u>        |
|---------------------------|---------------------|---|---------------------|------------------------------|---------------------|
| <i>Control</i>            | 9                   | <i>College of Arts &amp; Sciences</i>                         | 14                  | <i>Christian</i>             | 9                   |
| <i>Primer</i>             | 8                   | <i>School of Engineering</i>                                  | 2                   | <i>Jewish</i>                | 1                   |
| <i>Total</i>              | 17                  | <i>School of Architecture</i>                                 | 1                   | <i>Atheist</i>               | 3                   |
| <b><i>Trip</i></b>        | <b><i>Count</i></b> | <b><i>Total</i></b>   | <b><i>17</i></b>    | <b><i>Agnostic</i></b>       | <b><i>2</i></b>     |
| <i>Tallahassee</i>        | 2                   | <b><i>Major</i></b>   | <b><i>Count</i></b> | <i>N/A</i>                   | 2                   |
| <i>Charleston</i>         | 1                   | <i>Science</i>  | 5                   | <b><i>Total</i></b>          | 17                  |
| <i>Annapolis</i>          | 5                   | <i>Business</i>   | 2                   | <b><i>Race/Ethnicity</i></b> | <b><i>Count</i></b> |
| <i>Point Reyes</i>        | 4                   | <i>Engineering</i>  | 2                   | <i>Caucasian</i>             | 13                  |
| <i>NOLA</i>               | 3                   | <i>Language Arts</i>  | 2                   | <i>Asian</i>                 | 2                   |
| <i>Orlando</i>            | 1                   | <i>Architecture</i>   | 1                   | <i>Hispanic/Latino</i>       | 1                   |
| <i>Atlanta</i>            | 1                   | <i>Social Science</i>   | 5                   | <i>Native American</i>       | 1                   |
| <b><i>Total</i></b>       | <b><i>17</i></b>    | <i>Undecided</i>  | 2                   | <b><i>Total</i></b>          | <b><i>17</i></b>    |
| <b><i>Gender</i></b>      | <b><i>Count</i></b> | <b><i>Total</i></b>   | <b><i>19*</i></b>   |                              |                     |
| <i>Male</i>               | 3                   | <i>*This number is due to 2 participants double majoring.</i> |                     |                              |                     |
| <i>Female</i>             | 14                  |   |                     |                              |                     |
| <b><i>Total</i></b>       | <b><i>17</i></b>    |   |                     |                              |                     |

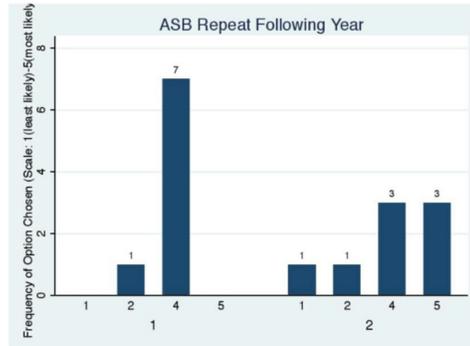
##### Summary Statistics

| <u>DATA TYPE</u>               | <u>MEAN</u> | <u>SD</u> | <u>MIN</u> | <u>MAX</u> | <u>N</u> | <u>DATA TYPE</u>               | <u>MEAN</u> | <u>STD DEV</u> | <u>MIN</u> | <u>MAX</u> | <u>N</u> |
|--------------------------------|-------------|-----------|------------|------------|----------|--------------------------------|-------------|----------------|------------|------------|----------|
| <b><i>TBE Registration</i></b> |             |           |            |            |          | <b><i>Volunteer Weekly</i></b> |             |                |            |            |          |
| <b><i>Full</i></b>             | 4.705882    | .5144958  | 0          | 1          | 17       | <b><i>Full</i></b>             | 3.764706    | 1.032558       | 1          | 5          | 17       |
| <b><i>Control</i></b>          | 3.333333    | .5        | 0          | 1          | 9        | <b><i>Control</i></b>          | 4.222222    | .6666667       | 3          | 5          | 9        |
| <b><i>Primer</i></b>           | 6.25        | .5175492  | 0          | 1          | 8        | <b><i>Primer</i></b>           | 3.25        | 1.164965       | 1          | 5          | 8        |
| <b><i>ASB Repeat</i></b>       |             |           |            |            |          | <b><i>Trip Rating</i></b>      |             |                |            |            |          |
| <b><i>Full</i></b>             | 3.75        | 1.125463  | 1          | 5          | 16       | <b><i>Full</i></b>             | 4.176471    | .9510057       | 2          | 5          | 17       |
| <b><i>Control</i></b>          | 3.75        | .7071068  | 2          | 4          | 8        | <b><i>Control</i></b>          | 4.222222    | 1.092906       | 2          | 5          | 9        |
| <b><i>Primer</i></b>           | 3.75        | 1.488048  | 1          | 5          | 8        | <b><i>Primer</i></b>           | 4.125       | .834523        | 3          | 5          | 8        |

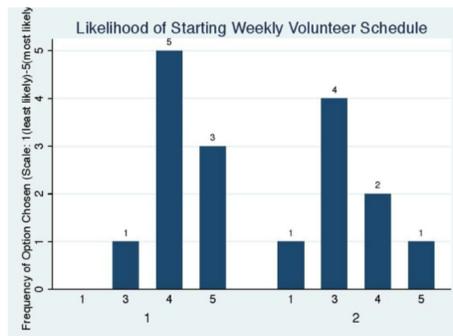
TBE Registration Bar Graph



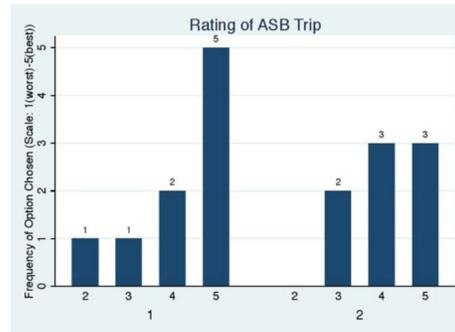
ASB Repeat Bar Graph



Volunteer Weekly Bar Graph



Trip Rating Bar Graph



**Works Cited**

<https://www.habitat.org/sites/default/files/fy2014programmilestonesinternational.pdf>  
<http://www.habitat.org/support/annualreport/2014/playingrolerippleeffect>  
<https://www.volunteeringinamerica.gov/>  
<https://www.volunteeringinamerica.gov/>  
[https://www.volunteeringinamerica.gov/ 6](https://www.volunteeringinamerica.gov/6) <http://altbreak.org/>  
[http://www.habitat.org/stories\\_multimedia/homeowner\\_stories/Homfeat\\_July2011\\_HarrisburgCobb.aspx](http://www.habitat.org/stories_multimedia/homeowner_stories/Homfeat_July2011_HarrisburgCobb.aspx)  
[http://www.casaforchildren.org/site/c.mtJSJ7MPIsE/b.8050173/k.8E91/John\\_and\\_Cheryl.htm](http://www.casaforchildren.org/site/c.mtJSJ7MPIsE/b.8050173/k.8E91/John_and_Cheryl.htm); [http://www.casaforchildren.org/site/c.mtJSJ7MPIsE/b.8411371/k.3B7C/Dashun\\_From\\_Victim\\_to\\_Victorious.htm](http://www.casaforchildren.org/site/c.mtJSJ7MPIsE/b.8411371/k.3B7C/Dashun_From_Victim_to_Victorious.htm)  
<http://bigevent.madisonhouse.org/>

# Qualification of Impact Made by Alternative Spring Break

Shota Ono  
Portland, OR

From March 5th to March 13th of 2016, I had the pleasure of traveling to Portland Oregon with nine other University of Virginia students, to work on environmental conservation projects with the Portland Parks and Recreation Department. This is the sixth year that the University of Virginia Alternative Spring Break program volunteered with them. From Monday, March 7th to Thursday, March 10th we spent the mornings and afternoons conducting service work such as trail maintenance, invasive plant removal, ecosystem management, and forest conservation.

Often times, people rave about the intangible benefits of Alternative Spring Break trips, and they understandably do so. I formed new friendships with people I would not have met otherwise, mentored elementary school students (see Figure 1), explored the new city of Portland, experienced the constantly rainy weather of springtime Pacific Northwest, and established a higher likeliness for myself to do service in the future, because this Alternative Spring Break was incredibly enjoyable.

The list of intangible benefits is endless, and more or less impossible to quantify. However, when thinking of the intangible benefits, I naturally also pondered about the tangible impacts. I know we were removing invasive plants, but given that the Portland Parks and Recreation Department cares for over 10,000 acres of parks and natural areas within the city, how much of an impact are we making? Is the contribution negligible? Are we really just serving ourselves? These are the questions I want to answer in this research paper.

To lay out the results first, this year we were able to remove more than 3000 sq. feet of invasive species (Figure 2), plant 23 trees (Figure 3) and mulch and plant 110 native shrubs and mentor 43 younger students. There are many ways to convert those numbers into percentages, which is a quantification of how much contribution we made divided by the contribution made by all volunteers and employees.

## **Snowberry and Thimbleberry Planting with Johnson Creek Watershed Council:**

We, as an Alternative Spring Break group, planted 110 native shrubs with the elementary school students. In the month of March, 1711 trees were planted by the Watershed Council, according to Noah Jenkins, the Riparian Program Manager of Johnson Creek Watershed Council. Most of the planting happens in February though, and the amount planted in the whole winter by Watershed Council was 14,677 trees. Therefore, our group contributed to 6.42% of the planting efforts in March, and 0.75% of the planting efforts in Winter 2015-2016.

These percentages seem small, considering these are the numbers from one council. However, Susan Hawes, Stewardship Coordinator of City Nature East says that our “individualized attention [for the elementary school students] is the most valuable contribution.” “We want to encourage the younger students to have good experiences in the park and having college mentors helps provide that,” Hawes says. “This also exponentially increases what the younger students are able to quantitatively accomplish, which can add to the younger students’ sense of pride and connection to the park.”



Figure 1. U.Va. students planted and mulched snowberry and thimbleberry trees with 3rd graders at Johnson Creek Park thanks to the partnership between the Johnson Creek Watershed Council, Southwest Charter School, Portland Parks & Recreation. All photos by Shota Ono.

## Tree Planting at Johnson Lake:

There are four Stewardship Coordinators for the City of Portland, and their planting season occurs December through early April. For the Columbia Slough watershed alone over 2400 plants. The plant goal for all four Stewardships as around 11,400, according to Yoko Silk, a Stewardship coordinator for Portland Parks and Recreation. Our Alternative Spring Break trip planted 23 plants here, so the contribution percentages are **0.95%** and **0.2 %**, respectively.

### Man-hour:

Our Alternative Spring Break trip consisted of 10 members. From Monday March 7th to Thursday March 10th, we volunteered 6 hours a day. Thus, we contributed 6 hours/member/day \* 10 members \* 4 days = 240 hours of volunteering. Official data for total volunteer hours were not found, but the City of Portland Bureau of Environmental Services (BES) partners with Portland Parks and Recreation reported that 3208 volunteer hours were put in the Fanno Creek Watershed Portland Parks Natural Areas Stewardship Projects in the 2014-2015 year. In the same time frame, 38,706 volunteer hours were reported for the Willamette River Watershed Portland Parks Natural Areas Stewardship Projects (2014-2015). Assuming that around There are five watersheds in Portland, so the contribution by our Alternative Spring Break group is easily below 0.1% in this regard. A limitation to this calculation is that I only had access to information on these two Stewardship projects.

The impact of environmental conservation efforts are easier to quantify than humanity-based efforts such as volunteering in orphanages or addressing homelessness, but even then, at the end of the day, the calculations done in this report are still highly arbitrary. The quality of the planting of the trees, the life expectancy of the trees, and how productive a volunteer is in an hour, to name a few, are all highly variable. Additionally, the denominator for our contributions is variable and fluid. As we increase the area of natural parks and time span, our contribution decreases.

What's important to remember is that there is no one hero or savior that "conserves" the environment. Although invasive ivies will grow back again and trees will die, these efforts are not futile. It is a cycle, and we served as a cog in the machine. According to Yoko Silk, "a huge part of the restoration work that we do in Portland Parks is done by volunteers." When volunteers tackle these small projects that take a few hours, the full-time employees can work on larger projects that take more than a few hours.

Even strictly from the perspective of the quantified contribution, I am elated to have contributed to ~0.1% of these efforts, because it is still a contribution. I see volunteering as similar to voting: my one vote may not be the deciding vote, but I have to vote to make a difference I want to see. That is what Alternative Spring Break taught me. ▶▶▶



Figure 2: Removing English Ivy, an invasive species that hinders the growth of native plants and thus reduces the biodiversity in the ecosystem.



Figure 3. The ASB trip planted 23 trees at Johnson Lake, cleared approximately 1000 square feet of English Ivy, and planted 200 seeds.

# Manifestations of Catholicism in the Rio Grande Valley: Faith-Based Organizations, Churches as Cultural Hubs, and Commonplace Religious Icons in Hidalgo County, TX

Elizabeth Parker  
San Juan, TX

## *Introduction*

“The Catholic community is rapidly re-encountering itself as an “immigrant Church,” a witness at once to the diversity of people who make up our world and to our unity in one humanity, destined to enjoy the fullness of God’s blessing in Jesus Christ.”

-Welcoming the Stranger Among Us: Unity in Diversity, A Statement of the U.S. Catholic Bishops

Hidalgo County, TX lies in the heart of the Rio Grande Valley in one of the southernmost points in the contiguous United States. In fact, it is located further south than one-third of Mexico. Hidalgo County encompasses the cities of Alamo, Alton, Donna, Edcouch, Edinburg, Elsa, Granjero, Hidalgo, La Joya, La Villa, McAllen, Mercedes, Mission, Palmhurst, Palmview, Penitas, Pharr, Progreso, Progreso Lakes, San Juan, and Sullivan contains a total of 831, 073 people, according to a 2014 estimate by the County Information Project Texas Association of Counties. However, this estimate may not account for the potentially thousands of undocumented immigrants and asylum seekers who live in the region and fled gang violence, political strife, and poor working conditions in their countries of origin.

South Texas receives a lot of coverage in the media for being a perfect example of a “border town” in the American immigration policy and reform debate. Much of Hidalgo County contains the border wall that separates the United States from Mexico, and the wall’s influence extends far beyond the soil it lies on. Hidalgo County even receives visits from presidential candidates during election seasons sometimes, most notably by Jeb Bush in August 2015. Immigration policy is an extremely complex issue that is oftentimes simplified by modern news sources, who miss the many nuances contained in the issue. The people in Hidalgo County experience the real, tangible effects of changes in immigration policy and the construction of a wall every single day. According to Time magazine, over the past six years more than 400 bodies of people who died trying to cross the border wall have been discovered in Brooks County, TX, which is just north of Hidalgo. To the people there, immigration statistics are not just numbers; rather, they are individuals, faces, and community members who pass through the region or end up calling it home. Many also seem to forget that a systemic problem as profound as immigration must understood within context of the cultural and historical background of the area.

This paper seeks to explore one of the important cultural and historic backgrounds of the Rio Grande Valley: The Catholic Church. In 1977, 70% of the people in the Rio Grande Valley identified as Catholic, which is almost 50% more than the 22% of those who identify as Catholic in the entire United States. On top of the comparatively small number of Catholics nationwide, over the past few years the country as seen a significant decline in mass attendance and belief in any religion—let alone Catholicism—at all. What exactly makes the Rio Grande Valley region unique in this regard? What kinds of forces are acting to influence the religious affiliation of inhabitants of the region? How is such a majority Catholic area preserved over time? What encourages these residents to stay active in their Catholic faith? Although many theologians and scholars draw significant parallels between the migrant experience of the family of Jesus Christ, whose mother had to travel a great distance to Bethlehem on a donkey, and the Central American immigrants who attempt to cross the border in order to bring better life to their children. In closely relating to the life of Jesus Christ, many migrants of the region stay connected to their Catholic faith. Nevertheless, this paper seeks to examine the concrete, physical presence of Catholicism in migrant culture of the Rio Grande Valley, including the prevalence of faith-based organizations (FBOs), the existence of churches and parishes as community centers and cultural hubs, and the standard use of Catholic icons such as the Virgin Mary and various saints in everyday public life.

## *Prevalence of Faith-Based Organization (FBOs)*

FBOs are typically nonprofit groups affiliated with religious institutions (i.e. a synagogue, mosque, or church) that provide some type of aid, charity, or social service to a particular population and offer said help as part of the mission of their religion. According to a December 2013 journal article by Díaz et. al, over the course of a typical week in Hidalgo County, 1 in 6 residents receive some form of assistance from a Hidalgo County FBO. Their study



Figure 1. Devotional candles on display for sale at the San Juan Walmart on March 5th, 2016. All photos by Elizabeth Parker.

**//Over the past six years more than 400 bodies of people who died trying to cross the border have been discovered in Brooks County, TX...**

surveyed 245 FBOs in Hidalgo County which provided “traditional medical interventions... [and] treatment of the whole person” or social services, which are “community social programs and interventions provided by FBO to the community at large.”

In McAllen, one of the more prominent FBOs is Catholic Charities of the Rio Grande Valley operating out of Sacred Heart Catholic Church. Its principal program, the Humanitarian Respite Center, serves as a refugee shelter for migrants seeking asylum status from the United States Government coming from Guatemala, El Salvador, and Honduras. The respite center runs out of what used to be a church fellowship hall that has been permanently converted to a shelter, containing an organized clothing donation area, an office, a playpen for young children, a dining area, a kitchen, bathrooms, and a medical clinic. The parking lot of the church now contains two mobile shower units courtesy of American Red Cross Disaster Relief and the Salvation Army. There are also two large, sturdy tents filled with cots stationed in the parking lot of the church for those refugees who must stay overnight at the shelter before continuing on their journey. Lawyers in the region also volunteer their time to provide legal counsel to the refugees who have court dates to finalize their asylum status. Since August 2015, the shelter has helped over 23,000 individuals on their journey from their home country to their final destination in the United States. The Center is run by Sister Norma Pimentel, who is the Executive Director of Catholic Charities of the Rio Grande Valley, and a Catholic nun.

Catholic Charities is a good example of a traditional FBO in Hidalgo County because its mission is not to convert refugees to Catholicism, but rather providing aid in the name of the Catholic Church. In fact, in the refugee shelter itself, volunteers receive printed instructions that they are not to proselytize the “guests” who visit the shelter; there is a clear message that the only task of the volunteers is to assist in the work being done, not assist in a religious conversion. However, when refugees enter the shelter there is an opportunity to pick up rosaries, which are traditional prayer beads in the Catholic Church, as well as prayer cards depicting the Virgin Mary and other saints. In that same corner, there is one framed picture of Jesus Christ depicting the Mystery of the Sacred Heart. According to the rules of the shelter and the otherwise lack of mentions of religion, it seems as though the beads and prayer cards serve more of a cultural purpose, perhaps in an effort to make the migrants feel at home, rather than to actually assist in either commencing or deepening their Catholic faith. In fact, apart from the presence of the Catholic Charities logo at the front of the room on a banner and the appearance of some religious jewelry on the volunteers and staff members, the shelter does not appear to be religiously-affiliated in any way.

#### *Churches as Community Centers and Cultural Hubs*

The main Church in Hidalgo County is the Basilica of Our Lady of San Juan del Valle, a shrine located off of Highway 83 in between McAllen and San Juan. This is one of the most visited shrines in the United States, averaging more than one million visitors a year with 20,000 visiting or attending services on any given weekend. The shrine opened in 1920 and is now a part of the Diocese of Brownsville. In 1999, Pope John Paul II designated it as a minor Basilica. It has Spanish, English, and Bilingual masses on every day of the week with three masses on weekdays and eight on Sundays. In addition, the Basilica is also home to a mariachi band that plays at weekend services. The Basilica connects both religious adoration to cultural significance, especially through the use of the mariachi band and the bilingual masses. Bilingual masses, although not extremely uncommon within the Catholic Church universally, are particularly important in this region due to the language gap that often exists between children and their parents: kids speak English as they learned it in public schools but the parents only speak Spanish and may be trying to learn English. The bilingual mass at the Shrine alternated readings in the Liturgy of the Word in English and Spanish, and whenever there was a reading in one language, a translation of the same reading in other language was projected onto a large screen in the front of the church, above the tabernacle. In this way, the mass had a diverse group of families in attendance and welcomed those who spoke either English or Spanish or even both. Although the Shrine it is not a parish, meaning it is not assigned to a particular community for ministry, it is a center for community in a more nontraditional sense.

The Basilica of San Juan del Valle also serves as a cultural hub because of its available amenities that facilitate cultural



Figure 2. Scented devotional candles depicting the Virgin of Guadalupe at Walmart.



Figure 3. Small Catholic statues on display at the large outdoor Flea Market in Alamo .

conversation and community bonding. Separate from the church, there is also a gift shop, hotel, café, bookstore, and life-size Stations of the Cross depicting the crucifixion of Jesus Christ. With places available to congregate, the Basilica serves as a cultural hub due to its sheer size and the nature of the region it ministers to. Furthermore, tourism is one of the major industries in Hidalgo County, principally due to the Shrine.

#### *Commonplace Use of Catholic Icons in Public Life*

The Hidalgo County region is home to businesses big and small, but it seems all have significant displays of Catholic icons in public, commercial life. The main store the area is Walmart, which although it is a national corporation, also allocated space for displays of cultural heritage and remembrance in its store in San Juan. In the Walmart “Celebration Center,” which is home to streamers, party hats, and balloons, among other things, also had an extremely wide selection of traditional Catholic candles, called devotional candles. All of them had writing in both Spanish and English on them. Some depicted the crucifixion of Jesus Christ, while others showed Saint Jude, others displayed His Holy Father Pope Francis, and still others had a dove, chalice, and the Holy Spirit. Perhaps the biggest section of devotional candles, though, was of the Virgen de Guadalupe, a very traditional Mexican religious icon of Mary, the Mother of God.

Beyond this display of Catholic imagery in Walmart, there were also more local stores that marketed large religious icons, most notably at a large, outdoor Flea Market in Alamo, TX. The flea market sold a variety of goods and provided a large array of services to customers who paid the 50 cent entrance fee; everything from hair cuts to acupuncture to puppies to football jerseys to avocados. There were also a few small carnival rides for children, a large selection of food and libations, a dance hall, and five live bands. At this large outdoor market, a popular gathering spot in the area on a Sunday afternoon, many retailers sold religious statues and portraits to customers.

#### *Conclusion*

Although Hidalgo County is home to almost one million people according to official United States Census records, there is no way to tell the real number of undocumented immigrants who also live there and call the region home. Because of the largely Catholic population, aspects of Christianity have a profound impact on the life and culture of the area. South Texas—a home for many undocumented immigrants and Central American-born asylum-seekers—retains a majority Catholic population in the face of nationwide declining church attendance. Three major aspects of the region, including FBOs, churches as cultural hubs, and the mainstream use of religious icons in the public sphere, have had a large influence on integrating Catholic faith with South Texan culture, perhaps rooted in the idea of Jesus Christ as an immigrant. As the Bible says when Moses gives God’s law in Exodus 22:21, “You shall not wrong or oppress a resident alien; for you were aliens in the land of Egypt.” ▶▶▶



Figure 4. Portraits displaying St. Jude, the Patron Saint of Lost Causes, and Jesus Christ and His Sacred Heart on display at the outdoor market.

#### Works Cited

Altman, Alex. "The Corridor of Death': Along America's Second Border." Time. Time, 28 May 2015. Web. 03 Apr. 2016.  
 Basilica of Our Lady of San Juan Del Valle. Basilica of Our Lady of San Juan Del Valle, n.d. Web. 03 Apr. 2016.  
 "Brownsville, Catholic Diocese of." Pellusch, Jana E. Handbook of Texas Online, 10 June 2010. Web. 03 Apr. 2016.  
 Catholic Charities of the Rio Grande Valley. Catholic Charities, 2015. Web. 03 Apr. 2016.  
 Chad, Sky. "Jeb Bush Talks Border Security with RGV Leaders." The Monitor. The Monitor, 24 Aug. 2015. Web. 03 Apr. 2016.  
 "Quotes from Church Teachings on the Rights of Migrants and Refugees." United States Conference of Catholic Bishops Bible. United States Conference of Catholic Bishops, n.d. Web. 03 Apr. 2016.  
 Ramirez-Johnson, Johnny, John Park, Colwick Wilson, Sharon Pittman, and Héctor Luis Díaz. "Result Filters." National Center for Biotechnology Information. Springer Science+Business Media New York, 17 Dec. 2013. Web. 03 Apr. 2016.  
 "Texas Cities and Towns Sorted by County." Texas Cities and Towns Sorted by County. The County Information Project Texas Association of Counties, 23 May 2013. Web. 03 Apr. 2016.

# A Walk in the Park: the Significance of Parks on Public Health and a Glimpse into Seattle Parks and Recreation

Stephanie Hwang  
Seattle, WA

*“It is an incalculable added pleasure to any one’s sum of happiness if he or she grows to know, even slightly and imperfectly, how to read and enjoy the wonder-book of nature.” –Theodore Roosevelt*

## INTRODUCTION

Popping pills has become a quick and easy fix for so many ailments. Many have come to expect pills for problems with sleep, weight-loss, focus, and pain. No one can deny that modern medicine saves lives, but some patients could be better served without a prescription for more pills. There should be a greater emphasis on healthy lifestyle choices to counter common health issues. Eating a well-balanced diet, exercising regularly, and practicing good sleep hygiene are more beneficial and less risky in the long run than taking pills.

In an effort to create healthier communities, urban architects and designers strive to integrate green infrastructure to promote environmental and economic stability. Part of this movement involves the preservation of parks and established wildlife reserves. By definition, a park is a designated natural space set aside for human recreation or wildlife conservation and preservation. They often provide a place to bring people together, build communities, and promote green spaces. Parks are essential for communities and, as it turns out, can play a significant role in maintaining a holistically healthy lifestyle.



PICTURE 1: Cityscape of Seattle from Gas Works Park, All photos courtesy of Stephanie Hwang

## PARKS AND PHYSICAL ACTIVITY

All people need physical activity to maintain their health and fitness. Daily physical activity provides countless benefits, such as help prevent heart disease and strokes, control body weight, strengthen bones and muscles, and increase strength, flexibility, and endurance. As people lead an ever-increasingly sedentary lifestyle, parks are becoming more important to maintain in our society than ever before. In fact, according to the Centers for Disease Control and Prevention, “only 25 percent of American adults engage in recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity at all” (Gies). This has led to a general increase in obesity and obesity-related illnesses, such as heart disease, strokes, and diabetes.

Parks within communities provide the perfect environment for fostering a healthier lifestyle because people are given a designated space for physical activity. Studies have shown that “when people have access to parks, they exercise more” (Gies). Not only does this positively impact the individual, but it may also lead others in the community to engage in physical activity. Other positive neighborhood factors also include an enjoyable scenery, frequently seeing others exercise, and satisfied access to recreation facilities (Bedimo-Rung, et al).

Though parks provide so many health-related benefits, they are often not utilized to their full potential by everyone because they are almost exclusively used solely for leisure and sport. Only a third of the population accounts for the majority of park participation, where most of these participants are of a smaller group of leisure enthusiasts (Bedimo-Rung, et al). Leisure activities include walking, viewing the scenery, and gathering for social events. Nonetheless, small amount of physical activity have a greater positive impact on health than no physical activity at all.

## PARKS AND PSYCHOLOGICAL HEALTH

Parks not only foster more physical activity, but studies have shown that contact with nature in parks can reduce the stress of urban living and promote psychological well-being. Interaction with nature can include anything from every day occurrences to specific events, such as viewing natural scenery to encountering certain plants and animals.

According to a study involving older adult park user, approximately half of the sample said their mood was better after visiting a park (Bedimo-Rung, et al). Benefits from being in a natural setting are said to “arise from a state of pleasant arousal and realization, resulting from returning to a more cyclical and slower sense of time” (Maller, et al). In addition, parks provide an environment for children to play and learn, which can be a critical element in the child’s future success. Play helps children develop cognitive functions, such as reasoning, language, and cognitive thinking, which they will need later in life (Gies).

In recent years, landscape researchers have been tapping into the positive effects of viewing natural scenes in stressful environments, such as hospitals, nursing homes, and outer space. In one experiment, having access to nature in the workplace led to lower levels of job stress and higher levels of job satisfaction (Maller, et al). In hospitals, even the simple act of viewing nature can affect patients’ moods and can decrease overall recovery time. Whether physically there or not, parks and green spaces can improve one’s overall psychological health.



PICTURE 2: ASB Participants after removing invasive species and planting a tree at a community center

## PARKS IN SEATTLE

Within the city of Seattle, Seattleites can visit over four hundred parks and open areas, which encompass over 6,000 acres of land (“Parks”). Managed by the Seattle Parks and Recreation, these designated areas are separated into nine districts throughout the city based on location. Their mission is to provide “welcoming and safe opportunities to play, learn, contemplate and build community, and promotes responsible stewardship of the land” with a strong commitment to the “environment within the community” (Seattle Parks and Recreation). In an effort to foster connection to nature and engage the community, Seattle Parks and Recreation has evolved to empower residents to promote a healthier lifestyle. In Seattle, a portion of the revenue collected from property taxes provides a steady stream of funding to Seattle Parks and Recreation. In the past, they relied on funding from a general fund, which was dependent on the state of the economy. In other words, if the economy was doing well, the Department would receive more funding than if the economy was doing poorly. With a stable revenue, they are able to focus on maintaining Seattle parks.

In the spring of 2012, the Seattle City Council and the Mayor launched the Parks Legacy Plan, which aims to ensure Seattle parks and their facilities are “accessible, full of opportunity, and financially and environmentally sustainable for everyone who wants to use them” (“Parks Legacy Plan”). With an emphasis on utilizing resources, city officials assess parks operations, maintenance costs, and public input.

Alki Beach Park, a long beach strip located between Alki Point and the Duwamish Head on Elliot Bay, was built with this principle in mind. Senior gardener Phil Renfrow used local resources to create a landscape that looked natural and fit the environment. After finding, gathering, and repositioning driftwood, Renfrow hoped it would help prevent erosion on the beach without compromising the integrity of the location. Not only are the logs functional, but they also allow people to interact with nature. According to Renfrow, local children often chose to climb the massive logs of driftwood instead of playing on playgrounds closer to their homes. In addition to the repositioned driftwood, native plants were replanted along the shoreline to enhance the beach’s aesthetics.

This method of design and build, where parks are shaped to their surrounding environment, was also cost effective. The materials were essentially free because Renfrow found the logs of driftwood, and the native plants were grown in the Parks and Recreation greenhouses. Parks and Recreation also owned the machinery used to reposition the logs. The only cost associated to the park was future maintenance. Alki Beach Park is a model for the construction of future parks, as it utilizes locally found resources, fits the given landscape, and allows people to interact with nature in a meaningful way.

Seattle parks not only have great recreational value, but they can also serve as a source of sustainable food. Because of Washington’s temperate climate, plants, such as apple trees and blackberry bushes, thrive in Seattle. In an effort to utilize fruit grown in urban areas, City Fruit, an organization founded in 2008, aims to promote the cultivation of urban fruit to connect people, protect the environment, and collect and distribute local produce to hunger relief programs

in the local community (Burrill). In this way, eating local produce is both healthier and, in this case, cheaper because the local fruit would not be eaten otherwise. It is important to recognize the factors that “help people live healthier before ending up in the medical system,” and parks can help people reconnect with their surroundings (Place). This movement to utilize urban planning for a healthier, more sustainable life can be tailored to any given park.

All in all, the parks in Seattle serve as the perfect model for utilizing resources and engaging the public in a meaningful way to create an environment that fosters a healthier lifestyle. Parks can make us happier, healthier, and more mindful of our surroundings. Simple life changes now can have lasting effects in the future, and compared to other methods of maintaining a healthy lifestyle, supporting and visiting parks is a walk in the park.▶▶▶



PICTURE 3: Beach cleanup at Alki Beach Park in Seattle

#### Works Cited

- Bedimo-Rung, Ariane L., Andrew J. Mowen, and Deborah A. Cohen. "The Significance of Parks to Physical Activity and Public Health: A Conceptual Model." *American Journal of Preventive Medicine* (2005): 159-68. PDF file.
- Burrill, Barb. Personal interview. 9 Mar. 2016.
- Franks, Sara. Personal interview. 8 Mar. 2016.
- Gies, Erica. *The Health Benefits of Parks: How Parks Help Keep Americans and Their Communities Fit and Healthy*. San Francisco: Trust for Public Land, 2006. PDF file.
- Maller, Cecily, et al. "Healthy Parks, Healthy People: The Health Benefits of Contact with Nature in a Park Context." *George Wright Forum* 26.2 (2009): n. pag. PDF file.
- "Parks." Seattle. N.p., 13 Jan. 2016. Web. 3 Apr. 2016. <<http://www.seattle.gov/parks/parkspaces/index.htm>>.
- Place, Natalie. Personal interview. 9 Mar. 2016.
- Renfrow, Phil. Personal interview. 10 Mar. 2016.
- Seattle Parks and Recreation. *Our City, Our Parks, Our Environment: Stewarding a Sustainable Park System for the Next Generation*. N.p.: n.p., 2013. PDF file.
- . "Parks Legacy Plan: Goals and Strategies." Sept. 2014. PDF file.
- Smith, Paul. Personal interview. 7 Mar. 2016.
- Taylor, Wendell C., et al. "Environmental Justice: A Framework for Collaboration between the Public Health and Parks and Recreation Fields to Study Disparities in Physical Activity." *Journal of Physical Activity & Health* (2007): S50-S63. PDF file.

# The Obscuring Nature of "Western" Health Care

Jeremy Jones  
Xela, Guatemala

While interacting with partners in Guatemala we quickly discovered that many Guatemalans have a fierce nationalistic pride and cultural identity. Guatemala has a rich yet tumultuous history checkered by complicated interactions with the United States, internal strife and discrimination, and staggering inequality. For example, Guatemala boasts the greatest GDP of any Central American nation yet also struggles with the fourth highest chronic malnutrition rate in the world. As such, it has attracted a flood of international NGOs, many of which end up being transitory and having limited impact.

Our trip partnered with Primeros Pasos, an organization that provides medical services to rural communities in the Valle Palajuno surrounding Quetzaltenango, Guatemala's second largest city. Primeros Pasos strives to engage directly with the community, differentiating itself from the numerous NGOs that frequent the area by its permanence and depth of involvement. Rather than simply treating illness, Primeros Pasos has large educational and nutritional programs to create cultural norms that promote healthier lifestyles and reduce the need of subsequent utilization of their services. Further, Primeros Pasos emphasizes employing members of the community, hoping to steadily augment their programs with those who live in the areas they serve to help ensure their programs are as practical, effective, and as culturally relevant as possible. This has allowed them to create impressive, far-reaching impact across several communities with a budget of less than \$100,000 per annum, even when counting medication and laboratory costs.

Yet, despite these efforts, it is near impossible to distance oneself from the cultural baggage and norms they bring with them. Many of the volunteers and overseers of the work of Primeros Pasos come from nations that fit the common perception of a "Western" nation. These understandings of the Western world tend to place hefty emphasis on the societies and cultures of Western Europe, the U.S., and Canada, almost to the exclusion of the significant and nuanced differences found in other regions included in the "Western" realm. As such, this investigation seeks to perform an introductory analysis of socio-cultural factors surrounding health care in Guatemala and, when relevant, compare them against the United States, highlighting elements of soft imperialism induced by typical Western attitudes and involvement. The paper by no means intends to critique Primeros Pasos, but rather encourage introspection.

## ACCESS

According to the Guatemalan constitution, everyone is guaranteed access to basic health services, and the government espouses this attitude. However, while it is true that health services are free in city hospitals, the barriers to obtaining these services can be extreme. Some of the communities in the Valle Palajuno are very isolated,

Primeros Pasos has large educational and nutritional programs to create cultural norms that promote healthier lifestyles and reduce the need of subsequent utilization of their services.

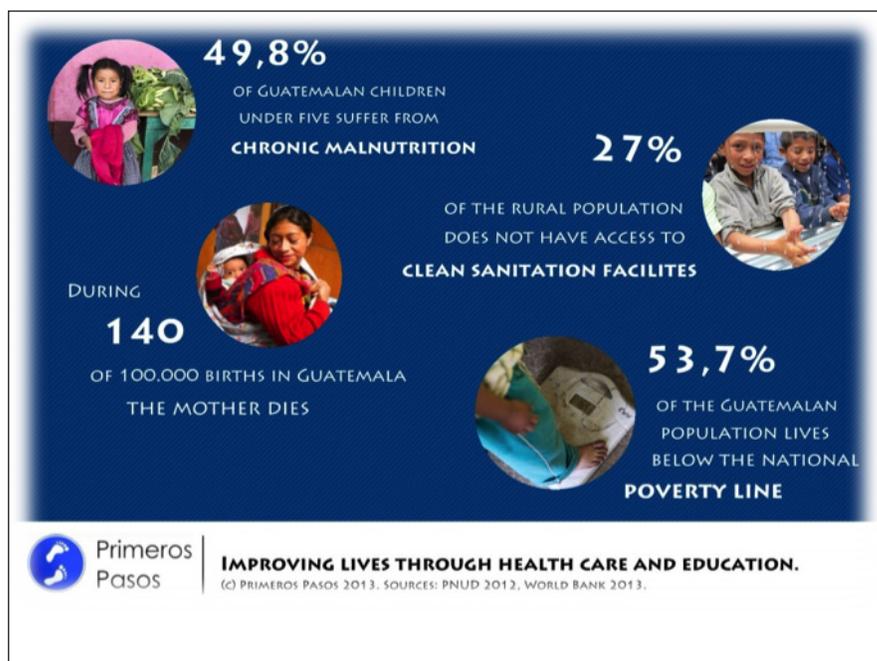


Figure 1. Statistics highlighting the need for support

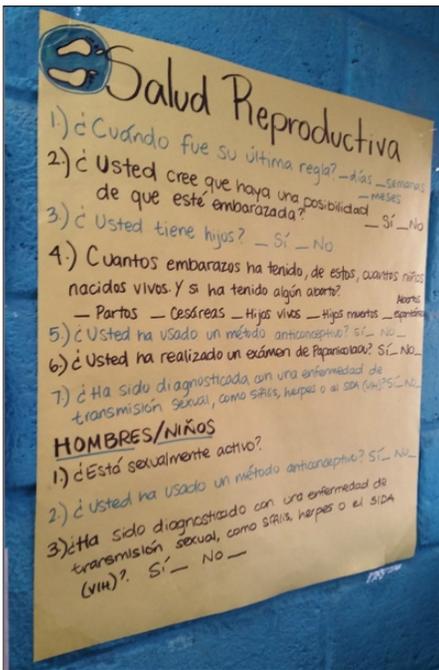


Figure 2. Checklist for reproductive health

with a singular narrow road across a mountain connecting them to other communities. Our bus had significant difficulties getting in and out of these communities, often requiring around 30 minutes of driving, a luxury many cannot afford in an emergency or with inconsistent access to a vehicle. While there are public health clinics outside of the cities, these often are still sparse in nature, tend to be lacking resources, and almost never have specialists. Interestingly, even if a patient from a rural community is able to make it into the city for care, they may struggle to communicate with their health care providers as these communities tend to speak one of the 22 indigenous languages (Quiché in the Valle Palajuno) and are less comfortable with the Spanish spoken in the cities. Hospitals also tend to exhibit a lack of respect for traditional Mayan values and spirituality, leading to hospital visits being traumatic experiences for some. Thus, these communities have become reliant on Primeros Pasos for their non-emergent health needs. An intriguing response by Primeros Pasos that differs from many NGOs is the nominal fee they charge for health services (10 Quetzals for children and 30 for adults, \$1.30 and \$3.90 respectively). These prices are not designed for profit generation but rather to instill value to the medical services, incentivizing others to take action to avoid becoming ill in the first place rather than simply relying on treatment. Speaking with women, we discovered this incentive was highly effective as they did not want to have to pay or spend time traveling to Primeros Pasos, but also seemed to not be excessively burdensome either. Everyone we asked agreed it was a very fair price to pay, but we must note their answers may have been skewed since we came with Primeros Pasos. Further, Primeros Pasos gives vaccines and STD examinations for free to discourage the spread of communicable illness.

It is interesting how access to health services is a prevailing issue in both the U.S. and Guatemala, but for Guatemala the cost of the services themselves are not preclusive, but rather the associated costs of obtaining them and cultural impact as compared to the runaway cost of the services themselves in the U.S. Another important striking contrast is the perception high resource countries tend to posit on lower resource countries of having a fear and distrust of vaccinations. Yet, in the early 2000s, Guatemala actually had higher vaccination rates than the U.S. (World Bank). There has recently been a slight decline in rates, but when we spoke to families the only reason they ever gave for not obtaining a vaccination was a lack of availability. There was great public trust in vaccinations but rather distrust in the government, who many believe purchased expired vaccines from India.

### CHILDBIRTH

Following the difficulties in reaching hospitals and utilizing their services, 80% of Guatemalan births occur in home with the assistance of a midwife. Further, only 5% occur by Caesarean section as compared to 33% in the U.S. This highlights the differences in attitudes towards health care, with Guatemala placing a much greater emphasis on homeopathy. To meet the demand of in home births, there are an estimated 20,000 midwives in Guatemala. They use a variety of teas and herbs to ameliorate symptoms such as morning sickness, cramping, UTIs, or to induce labor. Other natural resources serve as powerful analgesics or antibiotics. While the active ingredients found in many of these teas are quite similar to those found in American medication, many Americans struggle to understand the value of these methods as a result of the heavy emphasis on allopathy in our society. The mysticism involved in midwifery in Guatemala is discomfoting to some, and leads to conflict between NGOs and communities when there is pressure to go to hospitals in emergent cases. Many families will vehemently oppose NGO prodding to go to a hospital, preferring the comfort of their own home. Rates of complications with midwives are purportedly on par with the hospitals and provide a much higher standard of care with greater focus on the individual. A midwife will only serve around 4 women per month, remaining in assistance to the family for the first few years of the child's life for a flat fee often around 500Q, allowing greater comfort and ease for the mother. This cost compares to the technically free hospital, where one will still have to pay 300Q for materials and will be much more uncomfortable, forced to wear gowns instead of more traditional garb for childbirth and subject to mandated episiotomies – a procedure many Mayan women have strong reaction against. In many high resource nations, we are beginning to see a return in popularity of midwifery and techniques associated with it (for example, hospitals in Spain are starting to include water baths) and in this redevelopment we can look to nations like Guatemala with well-developed, modern midwifery practices. While speaking to mothers and a comadrona (midwife) it quickly became clear that midwifing tradition was a critical part of the culture and also a point of strong, consistent source of conflict between NGOs and patients.

## **EDUCATION**

The Guatemalan public education system as a whole is struggling and quite underfinanced. Education is compulsory until age 13, yet attendance rates are low, hovering around 40%. There is only one state funded university in the entire country and the literacy rate is only about 70% (compared to 99% in the U.S.). Further, in poor rural regions where there are higher Mayan populations these literacy rates can drop as low as 30% among women. There is a general distrust among many Mayan populations due to the lack of focus on heritage and culture in the formal curriculum and they are



Fig 3. One of the gardens created by our group

worried formal education is eroding their heritage, especially since most higher education is available to them only through Catholic run schools and English is needed to be successful in academics. Further, during harvest season a student enrolled in classes is one fewer set of hands, something poorer populations cannot afford to be without. As such, little time and attention is devoted in formal education to nutrition and health issues and Primeros Pasos has been working actively with local governments to help remedy this. In doing so they have brought up an interesting and complex issue. Thanks to heavy lobbying by a Peace Corp worker assisting the school system, they have been able to include sexual education in the curriculum and work against young pregnancy rates, and encourage understanding of how STDs are transmitted.

Yet, in these regions discussions about sexual health are rather taboo and the community has reacted strongly. For example, Primeros Pasos mentioned how one school cancelled classes the day they were supposed to come just to prevent discussion. Yet, they were also proud to tell us how despite that they have been able to continue with this education and include fairly comprehensive sexual education that is on par with American public education in detail. The health benefits and value of sexual education is undeniable. Still, these are largely Catholic communities. Is it fair to force community engagement against their will? Many families likely feel an inability to protest, due to concerns of gaining ill favor from Primeros Pasos, their primary source of health services. Meanwhile, while invoking our style of sexual education, we are instilling and encouraging a view on sexual relations among younger generations that more closely matches those of the U.S., leading to the very change of culture many Mayans fear.

## **NUTRITION**

The root of many preventable health issues can be traced back to severe malnutrition. There is a general lack of potable water in rural communities that poses extremely severe risks. Often there would only be one water source for a community, requiring long travel and significant effort to obtain, leading to exhaustion. This water was also needed to grow flowers, which many women in the region grew for income. As such, people often consume soft drinks which were more readily accessible and fulfilling. Primeros Pasos has worked hard to stress the importance of water and adequate nutrition. From interacting with children it seemed these conversations were creating real impact.

Our work came as part of a Nutritional Recuperation Program available to families with children under 5 years of age. Participating women were trained on the importance of a varied diet and how to maintain multiple generations of crops. Our job was to help them install these gardens post training. The women worked eagerly beside us, continually asking us questions despite knowing more than us about the soil and crops. This highlights the excitement and interest these families had in using the resources of Primeros Pasos to augment their own nutrition and bolster the health of their children, a striking contrast to the more apathetic approach illustrated by much of the American populace. Investment in disadvantaged groups has clear value and is already leading to major changes in communal well-being. I am eager to see the results of this relatively new program and how health and well-being of children in the program improves in the coming years. Further, I hope to see the continued development of a more equal partnership with the community that leads to greater community influence in modeling the services to fit their needs, not a prototypical Western ideal. ►►►

# Dining Halls and Food Insecurity: How Small Things Can Have Enormous Effects

Paige Yanity  
San Francisco, CA

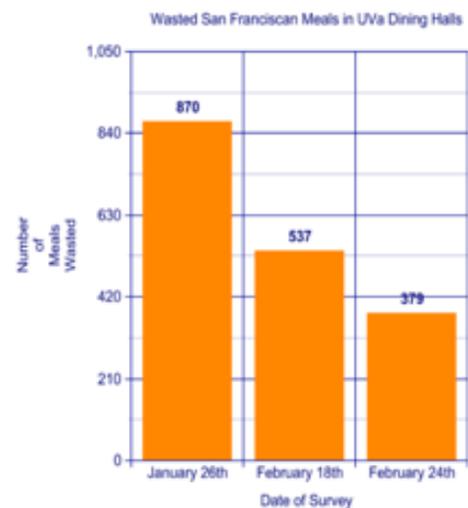
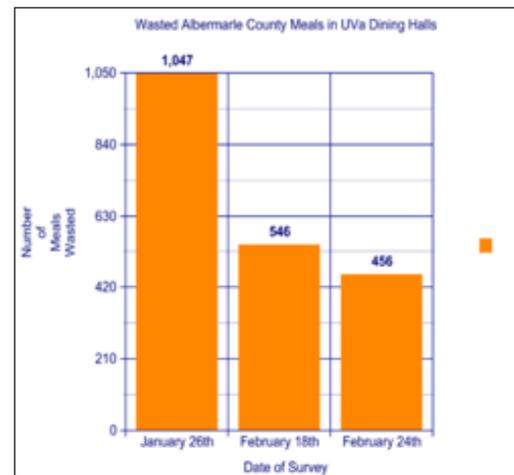
## Introduction:

In the month leading up to the San Francisco ASB trip, I became a part of a study conducted by the University of Virginia Dining Services that calculated dining hall food waste on January 26th, February 18th, and February 24th in Observatory Hill and Runk dining halls. Because of UVa Dining Service's pristine sustainability efforts, their ordering of food according to predicted student attendance, and their "serve-to-request policy," which only prepares food according to student requests (this is why students often wait in long lines), there is almost 0% raw food waste from the dining halls themselves. Thus, nearly all food waste comes from students, which accumulates to be much more than we'd ever imagine it to be.

After crunching numbers and making (fairly) accurate estimations (such as the estimation of UVa students eating 2.5 meals a day), I figured out about how many "Albemarle County Meals" were wasted in student food waste during each of the three studies (average meal in Albemarle County (according to Feeding America Statistics) = \$3.17). After the trip, I thought it would be interesting to see the effects of our food waste beyond Albemarle County, and applied our statistics to Marin County, the county of the food bank we volunteered at in San Francisco, SF-Marin. Although our food waste naturally wouldn't produce as many meals in Marin County as it would in Albemarle County (because of a higher cost of a meal in Marin County- \$3.74 vs. \$3.11, according to Feeding America statistics), it would still have a huge effect on closing the meal gap in Marin County, which is much larger than Albemarle County's, due to its greater size and poverty rate (\$20,019,000.00 required to meet food needs vs. \$5,604,000.00, according to Feeding America). Because UVa Dining Services orders food according to the amount its students' take, not taking food, as a student, that you won't eat anyway will have direct effects on the community – it will cause less unwanted food to be in the dining halls and more wanted – needed – food in the communities. By reducing food waste, along with the help of food banks and sustainable practices (such as growing our own food in our gardens or growing food for the community in local gardens), the "meal gap" can be significantly decreased, and great steps can be made toward solving the prevalent issue of hunger.



Sampling of food waste from Observatory Hill Dining Hall on February 18th, 2016. All photos by Paige Yanity.



*While in San Francisco:*

During the San Francisco trip, we experienced many variations of small tasks that have huge impacts on reducing hunger. The first day, we sorted the “bad oranges” from the “good oranges” that were designated to go to the various food pantries of the SF-Marine Food Bank. It seemed like we were doing a menial task that could be done by a machine (although machines can’t tell the nuances in what’s “bad” and “good”), and each box of oranges was more and more bottomless than the previous, seeming as if we were accomplishing nothing. When we were done, however, and heard the statistics, we were astonished. We had sorted 23,584 pounds of oranges into the “good” pile, which, if meals could be comprised solely of oranges, would be about 103,298 college-student meals! The most gratifying experience, however, was three days later, when we were volunteering at the Cameron House Food Pantry, and saw the very oranges we packaged arrive. We saw our original effort handed out directly to the community, and with this, we realized the little task we did – the task of sorting the “good” oranges right before they became stale – really did make a difference to those who were in desperate need of food.

The next few days, we visited urban gardens at schools and learned about how students were able to cut food costs (and thus obtain more necessary food) by growing locally. When we visited June Jordan School for Equity, we witnessed how each student in the class was able to produce a week’s worth of meals just by planting three seed packages of three different plants. When we visited the “Edible Schoolyard” at Martin Luther King, Jr. Middle School, and witnessed not only how students were learning at a young age about how to grow their own food, but also how to cook it in the most effective and sustainable way possible, we were reminded of how some of the best learning is very interdisciplinary and non-traditional and how these methods teach skills valuable for life.

Along with these methods, I gave an interactive presentation on another method to “solve hunger” – reducing personal food waste – during our final meal in the hostel. I collected everyone’s food waste from dinner that night – 16 ounces worth, and told them that it in itself was around 4 meals, according to my estimations. They were all shocked, and didn’t realize how much their mindless leftovers affected those around them, making promises to themselves to be more conscientious when they returned to UVA.



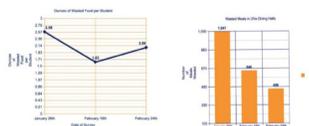
A six-year-old Levi, pictured front, begins his food sustainability journey at a young age by volunteering with his father, Lexy, at the SF-Marine Food Bank on Sundays.

In 2014, UVA Dining Services conducted three surveys of student food waste in Observatory Hill and Bull Dining Halls. The purpose of these studies was to inform students of how much food they were actually wasting and that a small amount of food waste translates into much larger effects. The results were astounding. The January 20th study at Observatory Hill showed 2.08 ounces per student, totaling 131 pounds for the day, of 770 students surveyed. The February 26th study at Observatory Hill showed great improvement, with 1.63 ounces per student, totaling 95 pounds for the day, of 580 students surveyed, but it is still too much to be satisfactory. The final survey conducted is less measurable, due to variable changes such as dining hall location and number of students surveyed, but the numbers are still not heartening. Of the 133 students surveyed, 10.09 ounces of food was wasted per student, totaling 24 pounds of food waste. Luckily, because of the sustainability initiative at UVA, each dining hall has prepared food

**WHAT CAN WE DO?** In order to get a better understanding of just how great the impact of a small amount of food waste is, I used my master thesis to generate approximate statistics on its effect on the Albemarle community. First, I took the average of all meal plans at UVA (excluding the lowest meal plan [Senior plans to avoid double-dipping], \$361.50), and divided it by 3 (average number of meals per day) to arrive at a meal cost of \$120.50. I then needed to know how many days in a semester to obtain the average cost of a UVA dining hall meal, or \$7.37. From there, I calculated an estimated profit margin for the dining halls of 15%, thus resulting in



The average cost of a meal is **\$3.11** but we still need **\$5,604,000.00** to meet food needs.



which could be put towards closing the Meal Gap. I found this by multiplying the number of days in a semester by 1,000 (to 1,000) with the daily rates of food waste. The estimate could be obtained. The results were quite scary: if a day like January 26th occurred all year, it would equate to \$13,215,000.00 in wasted food. If a day like February 26th occurred all year, it would equate to \$13,215,000.00 in wasted food. If a day like January 26th occurred all year, it would equate to \$13,215,000.00 in wasted food. If a day like February 26th occurred all year, it would equate to \$13,215,000.00 in wasted food. If a day like January 26th occurred all year, it would equate to \$13,215,000.00 in wasted food. If a day like February 26th occurred all year, it would equate to \$13,215,000.00 in wasted food.

*Conclusion:*

As described above, we learned so much from the research and outstanding ASB experience, such as the fact that food insecurity is a huge issue that needs to be approached from multiple perspectives, from food banks, to local agriculture, to being more parsimonious with dinner food. However, in the end, two insights really stuck:

It's the little things – the sorting of oranges into “good” and “bad” containers, the foregoing of one extra slice of pizza that won't be eaten, the learning of where to place seeds and for how long to grow them – that make the greatest impact in the long-run.

The best way to teach concepts such as the one above; to teach anything – is through interactive education. By utilizing interactive means, not only are students learning about an idea, but they are experiencing the effects of this idea; they are embedding it into their minds and applying it to other situations; taking part in its processes and development.

After completing the small task of separating the oranges at the food bank and seeing our labor's direct effect at the Cameron House, after watching middle and high schoolers learn so much from just 30 minutes of hands-on garden work, after watching the small waste on my plate get dumped into a massive bin full of other food waste; I learned so much more about the impacts of a seemingly-measly amount work, time, and food on food insecurity than I would have if I were in a lecture on it. Just as all small things can have massive impacts, our small time in San Francisco had an impact far beyond that of Spring Break – the relationships we built and things we learned have been carried with us back to UVA, they have sprouted beyond the seed into a more interconnected network of people and ideas, developing the university into a greater resource, family, and place. Solving the world's issues will not happen in one day, but it has to begin somewhere, and the best places for it to begin are the simplest ones, such as a friendship, a garden, or eating that last bit of carrot on your plate. ▶▶▶



Our team at the SF-Marín Food Bank.

# 2016 trips & executive

## spring trips

### Domestic

Annapolis, MD  
Asheville, NC  
Atlanta, GA  
Austin, TX  
Biloxi, MS  
Biscayne, FL  
Catalina Mountains, AZ  
Congaree, SC  
Grand Canyon, AZ  
Hilton Head, SC  
Joshua Tree, CA  
Los Angeles, CA  
Moab, UT  
Nashville, TN  
New Orleans, LA (St. Bernard Project)  
New Orleans, LA (Youth Rebuilding  
NOLA)  
Orlando, FL  
Pensacola, FL  
Point Reyes, CA  
Portland, OR  
San Francisco, CA  
San Juan, TX  
Seattle, WA  
Sunflower County, MS  
Tallahassee, FL  
Tuscaloosa, AL  
Virginia Road Trip  
Zion, UT



### International

Drake Bay, Costa Rica  
Fajardo, Puerto Rico  
Nicaragua  
Virgin Islands  
Xela, Guatemala

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**Vice President**, Devin Rowell ('16)  
**Treasurer**, Jordan Kohn ('16)  
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**Outreach Chairs**, Jane Winthrop ('17) & Elizabeth Brown ('16)  
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