

Engineers Without Borders Newsletter

Spring Trip Update

Lehigh University

Over this past spring break, an inaugural team of EWB members- Jack Payne (Travel Team Leader), Kelby Anderson, and Hannah Clarkson (HSO)- traveled to El Manantial, Dominican Republic to complete an assessment for our water supply project. Dan Zeroka accompanied them as a faculty adviser. This was EWB-Lehigh's first trip to the Dominican Republic with students. The goals of this trip were (1) to meet with community members and the community leader, Fausto, to discuss community agreement, (2) to form a water board, (3) to map/survey the community, (4) to meet with the local mayor in Villa Vasquez, and (5) to meet with INDRI and INAPA, specifically with Jesus Medina, an experienced hydrogeologist in the area.

All the goals of the trip were satisfactorily completed and the chapter is in review with EWB Nationals. The team started the trip by first discussing the project plan with Fausto to hear his input and concerns. Then, the team was able to learn and understand more about the community of El Manantial. El Manantial consists of about 450 people and 130 houses. Currently, the community is provided water through INAPA in a 55-gallon barrel that is refilled every week. However, sometimes the 55-gallon tank only lasts 1 day. The community has not had rained since November, and the salinity in the three existing wells is extremely high. Two of the wells are private and therefore were not available for public use.

With these drought situations in mind, the travel team gathered data that would help the community moving forward. The team took half of the data points that measured the elevation of each house and the highest point in the community. Then, the team tested the well's conductivity and was able to have a meeting with the water board to set the expectation of the project. Lastly, the team was able to meet with the Mayor's council and get our project approved before coming back to Bethlehem!

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A MESSAGE FROM THE PRESIDENT...

Hello friends and alumni of EWB-Lehigh,

2019 has been a big year for the Lehigh chapter so far. We sent our very first student travel team to the Dominican Republic in March of 2019 to complete an assessment trip. Our new community, El Manantial, is a predominantly agricultural community that is in need for a water distribution system. It has not rained in the community since November 2018 and several of the hand dug wells have high salinity content. Our community contact, Fausto, is excited to work with us and our partner NGO Agrofrontera remains committed to providing rural Dominican residents with water.

Our partnership with the Lehigh Valley Professional Chapter is still going strong and it was interesting to see their hard work in Machete and Cabeza Del Toro. We are still in talks with the Dean of the P.C. Rossin College to build a partnership where they cover our technical assessment fees and various travel costs. It's an exciting time for the chapter between a new country and new partnerships, and we hope to begin implementing our distribution system in the Spring of next year. Our immediate next steps are to determine a well location and then begin drilling, which is what we will be fundraising for next! Thank you all for your continued support and I hope you will donate to our implementation in the future.

Best,

*Sage Herrick
EWB President*

Spring Trip Update Continued



Project Team Update

Marching 97

This group's goal was to design a facility for Lehigh's Marching 97 that can satisfy their needs for a climate-controlled storage, practice, and administration space on the Goodman Campus.

This semester, the group refined architectural and structural design for the proposed facility, working with multiple faculty members to tailor the design to their needs. They also have begun working on a cost estimate, drawing set, and proposal report to be presented next semester to Marching 97 alumni interested in supporting this project financially.

Water Distribution

This group's goal was to create a water distribution system for El Manantial, a community in the Dominican Republic.

The semester's work consisted of gaining more information about the layout of El Manantial. During the Spring Break Trip, the team was able to collect information through a GPS receiver, with the coordinates of all the major buildings in the area. The data collected helped this group, along with John Cirucci, to develop a GIS map of the area, including features such as the houses and major buildings that will need to be supplied water with the new distribution system, major roads, and contour lines indicating the elevations of the region. The next step is to pass on the map on to the hydrogeologist in El Manantial, who is expected to be able to analyze and recommend the best location to create a new well in the future.

Water Purification

This group's goal was to create a water quality testing manual for use in determining the optimal source for a distribution project in El Manantial, Dominican Republic. This manual will be used to help prepare members of Lehigh travel teams for water quality testing in the field, and ultimately aid in the provision of clean water to the citizens of El Manantial.

This semester, the group has spent most of their time researching various water contaminants and comparing different testing methods. They have compiled this research into a manual draft, and plan on continuing to add information on new contaminants to this manual over time. Next semester, chosen water tests will be ordered and practiced at Lehigh for the purpose of solidifying protocols for future members of Lehigh EWB travel teams.

Calisthenics Park

The group's goals were to determine the proper material, dimensions for each piece workout equipment, and validate the structural integrity of each component to the system.

This semester, the group was tasked with designing a feasible calisthenics park that is open to the public. Looking forward, they seek to do some lab testing to get real life scenarios of fracture mechanics and structural integrity.



Social Team Update

Impacts of Agriculture on Rural

This group's goal was to study how agriculture affects the members of the community and water quality, and how the travel team can best communicate the proper uses of the EWB water distribution systems in the communities that EWB has worked with in the past, mainly El Manantial in the Dominican Republic.

Over the semester, the group has conducted research on the economic importance of agriculture, how the EWB presence within the community can have negative social impacts, and the many hardships within the community. In the future, the group suggests keeping in contact with the communities so that EWB can get a better understanding of the community's needs and create solutions that are better tailored to what the community desires.

Corporate Social Responsibility

International companies often invest in CSR efforts in local projects, including those within the Dominican Republic. These companies not only provide potential partnership and funding opportunities, but also their work might provide some insights on projects we undertake as a chapter.

The goal of this group was to research multiple companies and what they do. This semester, the group has provided a formal deliverable about the research, and has communicated with several companies and their PR groups to obtain all the information.

Children's Health Research

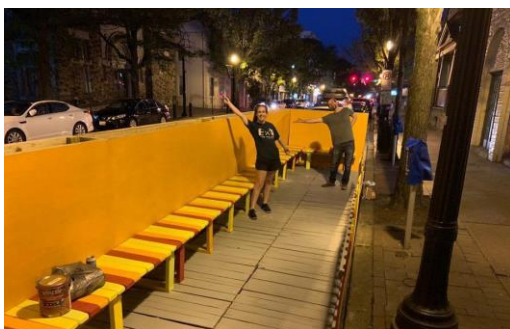
Over this past semester, this group focused their efforts on research of the effects of water purification systems on children's health. The students did a literature review of past case studies and reports of similar topics in rural areas, similar to the community that EWB is partnered with, El Manantial. From that, they have determined crucial topics to study further: disease prevalence, and availability and distance to both potable water and health services. The students composed related interview questions that they plan to ask community members before and after the impending installation of the water purification system in efforts of analyzing its impacts.

This group hopes to travel to El Manantial to conduct this research with the support of a travel grant.



Fundraising Committee Update

This semester, the fundraising team has had a few very successful fundraisers. The afternoon at Playa Bowls was a fun and effective way to connect more fully as a club outside of the usual weekly meeting and raise money for our projects. Also, this year, we experimented with a Bake Sale and even with the stormy weather, offered goodies donated from local bakeries to many students. A big thank you to LIT Coffee Roastery and Bakeshop, Perkins Restaurant and Bakery, and Connie's Cakes and Cookies for their generous donations to our sale! It has truly been a prosperous semester, and we are excited to see what Gabby Alves, class of '22, the next Fundraising Chair, has in store for the Fall.



Outreach Committee Update

This semester, the Outreach Committee has been hard at work on constructing a parklet for Roasted on East 4th Street. The parklet will beautify South Bethlehem while offering an additional meeting place for residents and allowing the local restaurant to serve more patrons. Working with Dr. Pooley and other Lehigh students the committee submitted designs to the city for permit approval. Then, they received woodshop certification training to begin construction. In addition to this, the outreach committee also co-hosted a make and take for RecycleMania with the Eco Reps and participated in the International bazaar.



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