

ENGINEERS WITHOUT BORDERS

LEHIGH UNIVERSITY CHAPTER
NEWSLETTER

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Travel Update



The pump test conducted in the village of Cabeza de Toro.



A well and field in El Manantial.



A seasonal lagoon in El Manantial.

This past September, one of our club's advisers and a former hydraulic engineering professor here at Lehigh, Dr. Richard Weisman, traveled to the Dominican Republic on behalf of our club. Hear his experience down below.



El Manantial, Dominican Republic

The main goals of my trip to the Dominican Republic last September were (1) to see the progress made by the Lehigh Valley Professional Chapter which is designing water supply systems for two communities in the northwest corner of the DR, (2) to meet people who are helping the LV Chapter with its projects, and (3) to visit the community of El Manantial which our Lehigh University Chapter of EWB has selected as our next project. I traveled with three other Lehigh Valley people: Bill MacNair, Julie Zeliensky, and Eddie Aybar.

All goals of the trip were satisfied. The LV Chapter has designs which are being approved by a government agency. I witnessed a pump test conducted by another agency in the community of Cabeza de Toro. I was able to see the layout of the community while looking at the plans for the water distribution system and the location for a storage tank. The community members present for the pump test were very excited and highly invested in seeing progress being made.

I met many people who will be vital to the success of our Lehigh University EWB Chapter project in El Manantial. This includes the engineers and geologists from government agencies, some non-governmental organizations (NGO's), some local politicians (alcaldes), people from Rotary, and the community leaders in El Manantial. A special mention should be made of Pastor Eddie Aybar, a resident of Allentown with strong connections to the Dominican Republic. Pastor Eddie has been a key player in the success of the Lehigh Valley Professional Chapter. During our trip, he was our translator our driver, and our cultural representative.

Our visit to El Manantial consisted of a community meeting with around 25 local residents, including the leaders of the village and a visit to 3 existing wells in the community. One of those wells might become our water source or we might need to have a new well drilled. There are also 3 ponds in or near the town that are used as stock ponds. Two of those were dry during our visit and one still held some water left over from the rainy season.

In summary, the trip was a success and we look forward to moving forward. We now know much about the logistics and travel arrangements for future visits and have a good idea about who to contact for well drilling, pump tests, permitting, help with construction, etc. And we have the support of the people of El Manantial to move forward with the project.

A Message from the President Regarding Nicaragua...

Hello EWB friends, alumni, and students:

We have some unfortunate news to share with you about our partners in Nicaragua.

In April of 2018, the Ortega government announced plans to reform their pension system and significantly reduce benefits for many working class people. This announcement resulted in an outbreak of pro-democracy protests. This event became the tipping point for an already tenuous relationship between the FSLN government and the Nicaraguan people. Police brutality and the government's harsh response to the protests resulted in escalated violence and casualties in the country's capital over the past months. In response to the situation, the US has placed a travel warning level 3 ban on Nicaragua.

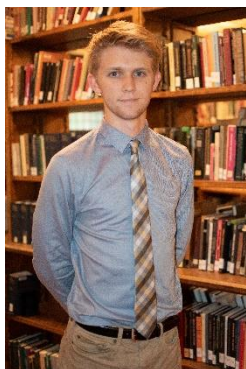
This travel ban has directly affected our chapter's ability to visit the Cebadilla and begin progress on a new project in the San Juan Del Sur area. Our last trip to the region occurred in March 2018. During this trip, myself, students & Rick monitored and ran tests on the water distribution system and completed an assessment of potential engineering projects in Cebadilla and the surrounding communities. This provided us with valuable information and the ability to explore a range of potential projects such as a small scale vehicular bridge, a soil stabilization project, and a water purification needs assessment. Our project teams last semester analyzed these proposals and potential timelines for each. Unfortunately, we have been unable to make progress given the current situation. We have maintained weekly communication with community members in Cebadilla and fully intend to return to the area once the travel ban is lifted. In the meantime, we will be focusing our resources and efforts on a water distribution project in the community of El Manantial in the Dominican Republic.

Thank you to all who supported our chapter's efforts in Nicaragua, and we will be back with the Roques soon.

Best,

Sage
EWB President

AIChE Conference



experience down below.

This past October, our secretary, Jacob DeWitt, who's a sophomore majoring in civil engineering and sustainable development (IDEAS), attended the 2018 Annual AIChE Student Conference. Hear his

"The 2018 Annual AIChE student conference was an excellent opportunity for me to explore the diverse field of Chemical Engineering and understand how this discipline could further be applied to Engineers Without Borders. I attended with the intention of receiving the Engineers Without Borders USA Grant Award on behalf of Lehigh EWB for our work in Nicaragua. The conference was a two-day event in which a series of lectures were given on a variety of topics from research to chemical engineering on global scale. After attending several lectures on global and local outreach, I left with a better understanding of the role of chemical engineers outside of the classroom." – Jacob DeWitt, Secretary

Project Class

Project class is a mutually beneficial partnership between Lehigh students and communities both local and abroad; Lehigh students have the chance to practice and augment their engineering skills through designing real world solutions, and the communities are better able to address challenges by having students do the leg work of the design.

Marching 97

Working to design a designated practice facility and storage space for band equipment on Goodman Campus

>> Has been meeting with the band manager, dean of athletics, and the Lehigh architect to determine the **optimal location** and **design** for the new building.

>> Began with five potential locations and have narrowed it down to three, in addition to having refined the designs for the **new floor plan** and **exterior**.

Water Distribution System

Creating a water distribution system in El Manantial, Dominican Republic with the Lehigh Valley EWB Professional Chapter

>> Has had multiple meetings with club advisor, Rick Weisman, and Bill McNair from the professional chapter to **understand the challenges** El Manantial faces.

>> Conducted research on **gravity fed systems** so they can make informed decisions when designing the distribution system.

>> Their next step is to **analyze the topography** in order to begin these designs.

Wells and Geotech

Determining water quality of wells in El Manantial, Nicaragua and potential water purification solutions to implement

>> Has met with Professor Lennon about water purification techniques and has researched a few methods to **purifying water**.

>> Will **analyze salinity and water quality data** to select a method of purification, and will also determine what additional tests should be run to understand the water they are working with.

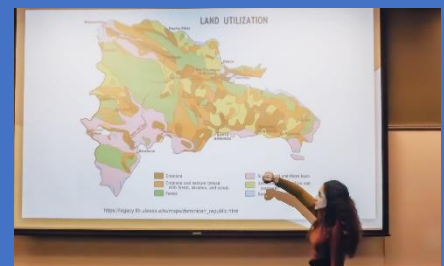
Knauss Homestead

Developing cost estimates and plans for restoring a historic local homestead

>> Has met with homestead contacts and visited the site in order to understand the goals of the project.

>> Has identified key projects at the site and performed preliminary **cost estimates**.

>> Will present these to their homestead contacts and continue to work with them.



Pictures from the final presentation

The EWB Social Class researches and works to develop sustainable practices for project implementation in developing countries and the local community. Group members will strive to protect community values, deeply consider environmental concerns, and provide long-term solutions.

Social Class Updates

A Guide to Society and Culture in the Dominican Republic

In order to successfully implement a **water distribution system**, EWB must foster a **positive relationship** with the community, which must be built on respect and understanding.

The group's goal is to learn about the **cultural**, **political**, and **social** aspects of the Dominican Republic, especially information that relates to our relationship with our community, El Manantial.

Campaign for Water Purification Sensitization

In many developing countries, it is important to create a meaningful and impactful method of communicating how important **clean water** truly is.

The group is working towards broadening the **impact of multimedia** and the general **campaign** to apply to any developing country, with the intent of working in the DR or Nicaragua.

Impact of Engineering Projects on Rural Communities

Organizations that have completed projects in developing countries often see unexpected consequences of not properly accounting for additional impacts (e.g. **community**, **environmental**, **social**, and **political**) of these projects.

>> The goal is to **create an impact report** on the selected topic of environmental impacts based on case studies of past engineering projects in rural, developing communities.

>> The group is planning to analyze what worked and what did not work in order to better advise EWB in the future.

Sustainability of Local Community Projects

Lehigh's Chapter of EWB has worked with Nicaraguan communities in the past, however, due to a travel ban, our chapter cannot currently continue to work there. It is important to stay relevant on **culture**, **politics**, and our **previous project** work in Nicaragua to allow for a seamless re-entry once the travel ban is lifted.

>> The goal is to create a **Guidebook to Nicaragua**, compiling information to create an accessible manual to future EWB members.

Translating Committee Updates

The Translating Committee has continued to **maintain communication** between Lehigh's chapter of Engineers Without Borders and the communities in both **Nicaragua** and the **Dominican Republic**. The main challenges have been due to scheduling and poor connection in the Dominican Republic due to tropical storms and quality of reception. The committee has and will continue to **mitigate these challenges** because of the importance of its mission, which is to uphold equity between EWB and the communities that it works in through **transparent and effective communication**.

Outreach Committee Updates



Spooktacular



Make-A-Thon



Latin Carnival



4 Lessons at Broughal Middle School

EWB's Outreach Committee focuses on projects within the local Bethlehem community and Lehigh's campus.

The committee volunteers to lead many STEM lessons throughout the year, such as a **water filtration lesson** at Broughal Middle School. It also helped co-organize the **Latin Carnaval** with two other campus organizations, which won a **2018 Student Life Award**.

The committee recently began a new hands-on endeavor at a local business to **create a parklet**. This will require the committee to **design and construct a public amenity** with seating and tables. We hope to beautify the location and draw more members from the community to the area.

Fundraising Committee Updates

Fundraising Committee aims to acquire funds for the club through applying for grants, holding fundraising events and soliciting donations.

This fall semester the fundraising Committee held two successful fundraisers at **Chipotle** and **Playa Bowls**, raising over **\$300**. The club's main source of funding is Lehigh's crowdfunding donation platform, linked below, and this year's goal for the club is to raise **\$3000**. As one of the last events this semester, and in the spirit of the holiday season, please support our club! Small contributions help as much as big ones. The funding will go towards our **student trip to El Manantial, Dominican Republic** in March 2019. Thank you for your support! <https://www.lehighcrowdfunding.com/campaigns/engineers-without-borders-3>



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