



# Engineers Without Borders USA: Drexel University Chapter

American Water Works Association  
(AWWA) Conference

# Presentation Content:

- Who we are
- What we do
- Where we're going
  - El Salvador Project
    - History & Current Status
  - **New** Ecuador Project





# Engineers Without Borders USA: Who We Are

Unleashing Great  
Minds on Great  
Problems



**651**

Projects Currently  
Underway



**45**

Countries We're Working  
In



**14,100**

Members Engineering  
Change



Energy



Sanitation



Water Supply



Structures



Agriculture



Civil Works



# **EWB-USA: Drexel University Chapter**



- **What We Do:**  
Serve people locally in Philadelphia and internationally through engineering projects to meet their basic needs
- **How We Do It:**  
Community engagement, sustainable design, long-term relationships
- **Why We Do It:**  
Opportunity to use our skills to help others



# EWB-USA: Drexel University Chapter

- Our current work:
  - Domestic Engineering Projects
  - Fundraising and Events
  - International Engineering Projects





# EWB-USA: Drexel University Chapter

- **Domestic Engineering Projects**
  - Dornsife Center at Drexel:  
Neighborhood resource center
    - Designing community composting system
  - Sanctuary Farms:  
Community garden
    - Irrigation system with solar pump

## Sanctuary Farms



## Dornsife Center



# Fundraising

## EWB-USA: Drexel University Chapter

- Fundraising

- Grant writing
- Fundraising Campaigns
- Selling merchandise
- Corporate sponsorships
- University resources

- Events

- University tabling events
- Annual Meet and Greet & Senior Send-Offs
- Quarterly social events
  - Game night, movie night, trivia night, and more
- Weekly department and General Body meetings



# Events



# EWB-USA: Drexel University Chapter

- International Engineering Projects
  - El Salvador Project
    - History & Current Status
  - **New** Ecuador Project
    - First steps

## El Salvador



## Ecuador





# Project: Miramar, El Salvador

- Adopted 2017
- Project Type: Water Supply
  - **Established:** 25 biosand filters installed, each at a residency
  - **Needed:** 5 biosand filters, repairs for existing filters, and continued education for community of operation and maintenance





# Project: Miramar, El Salvador

## Background

- Community consists of 200 people displaced during El Salvadoran Civil War
- 35 households with around \$10 a day income
- 2 public and 10 private hand-dug wells
- Water shortage due to dry season and hilltop conditions
- Water contamination due to livestock and open wells
- Water management and education lacking



# Project: Miramar, El Salvador

## Our approach & progress



- Project:
  - Concrete filters based on CAWST design
- Accomplished:
  - Local contractor partnership & community collaboration
  - 25 out of 34 filters installed
- Remaining:
  - Build 5 filters
  - Repair existing filters
  - Educate households on O&P
- Rainwater Catchment System:
  - Catch and store rainwater during rainy season for supply during dry season
  - Gutter system attached to roofs of houses
- Accomplished:
  - Topographic info gathered
  - Researched alternatives and costs
- Objectives:
  - Determine catchment potential, optimal design
  - Gather community feedback



# New Project: San Luis De Yacupungo, Ecuador

- Adopted November 2018
- Project Type: Water Supply
  - **Established:** Water tanks & distribution system
  - **Needed:** Water purification, slight extension of distribution system, and protection of water source





## **New Project: San Luis De Yacupungo, Ecuador Background**

- Community consists of 258 people
- 58 households
- Has water distribution system with chlorine but water is contaminated
- Some households are not connected to distribution system
- Located near Cotopaxi Volcano and suffered from ash contamination during 2015 eruption
  - Many were without clean water for months and all livestock and crops were lost





# New Project: San Luis De Yacupungo, Ecuador

## Our Plan

- Project:
  - Protection of water source, make water potable, extension of distribution system
- Next Steps:
  - Define final parameters and specific scope, develop solutions
  - Assessment trip March 23rd-31st, 2019
    - Survey site, investigate current state of water supply, establish in-country project contacts and relationships
- Water Testing
  - Testing for pathogens, pH, chlorine, metals, and more
- Drone surveying
  - Community layout photo and video footage
  - Elevation data collection
    - Altimeters used for data comparison
  - Topographic analysis
  - Record of surrounding geographical features, communities, and alternative water sources
- Interviewing of community members





# Contact Us

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# Connect with Us



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