



# Partnering for Impact Sponsorship Package

*Engineers Without Borders - Cornell*





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# About Engineers Without Borders

Engineers Without Borders at Cornell University (EWB-Cornell) is a student-led organization committed to creating sustainable engineering solutions that empower local and international communities toward a more prosperous and enduring future. Our mission is to combine technical expertise with a strong sense of social responsibility, working directly with communities to address critical infrastructural challenges and promote long-term resilience. As an active chapter of Engineers Without Borders USA, a 501(c)(3) nonprofit organization, we uphold the highest standards of ethical engineering practice, sustainability, and community partnership. Every project we undertake is built on a foundation of cooperation, transparency, and mutual respect, ensuring that the solutions we develop are both technically sound and aligned with the goals and values of the communities we serve.

Through interdisciplinary collaboration, we offer students from social, environmental, and engineering backgrounds the opportunity to apply their academic knowledge to humanitarian efforts. Our members engage in every stage of the project lifecycle—from needs assessment and technical design to implementation and evaluation—fostering critical skills in leadership, project management, cross-cultural communication, and global development.

Our current initiatives consist of:

- A decentralized septic system providing essential sanitation access to a growing community in Barrio San Cristóbal, Tarija, Bolivia;
- A sustainable stormwater management and irrigation project for the Festival Beach Community Garden, in Austin, Texas;
- A smart drone and rover system that addresses food insecurity by utilizing machine learning to identify cropland Northern Leaf Blight;
- And multiple software platforms that support local efforts in environmental conservation and resource equity.

At EWB-Cornell, we believe engineering can be a powerful tool for creating lasting, positive change. With the support of sponsors and partners, we are proud to help train the next generation of socially conscious engineers while building stronger, healthier, and more resilient communities around the world.

*We thank you for taking the time to get to know the people and projects that make up our project team.*



Gregory Pepin  
President, Engineers Without Borders–Cornell

# Our History



## International Origins: Calcha, Bolivia

Implemented a new walking bridge to develop the safety and productivity of local agricultural fields. Optimized existing water management systems to improve fresh water quantity and quality.

## Erie Aquaponics Challenge

Designed an aquaponics greenhouse facility for Erie, PA. Completed designs for affordable and sustainable refrigeration equipment.



## Pine Ridge, South Dakota

Partnered with First Families Now, to provide a cost effective permanent housing solution for individuals facing housing insecurity.

## Cornell Wardrobe Project

Developed an app to optimize the management of Cornell's Wardrobe Project, a sustainability and equity effort which provides free gently used professional attire.



**Donation Application for the Finger Lakes ReUse Center \***

2009 The Cornell University Chapter of EWB is founded.

2010

2011



2012 EWB Cornell is recognized as a Cornell College of Engineering Project team

2013

2014

## Going Domestic: Binghamton, EPOD

Partnered with Every1sHome to design an inexpensive portable shelter for the homeless population of Binghamton, NY.

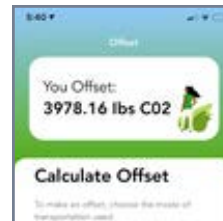


2015

2016

2017

2018



## Sustainable Software

Developed a carbon offset management tool in partnership with Sustainable Tompkins.

2019

2020

2021

2022

2023

## Irrigation in Sunuka, Tanzania

Implemented an irrigation system to address food and economic insecurity.



## Machine Learning Powered Drone and Rover System for Northern Leaf Blight Detection \*

2024

## Sewage Management in Barrio San Cristóbal, Bolivia \*

2025

## Stormwater Reuse in Austin, TX \*





# BARRIO SAN CRISTÓBAL

## Plumbing and Sanitation Initiative

*“DONDE HAY AGUA, HAY VIDA”*

## Barrio San Cristóbal – Plumbing and Sanitation

In Barrio San Cristóbal, a small community in rural southern Bolivia, more than 300 people lack access to safe and reliable drinking water and plumbing systems. This lack of basic infrastructure forces families in the community to consume contaminated drinking water and pollute the local land. With over 100 new households expected to join the Barrio San Cristóbal in the coming years, the need for sustainable plumbing infrastructure is essential and urgent to keep the community healthy.



After visiting Barrio San Cristobal in the Spring of 2025, Engineers Without Borders at Cornell adopted a multi-year project to design and implement a plumbing system that is affordable, climate-resilient, and locally maintainable. During the assessment trip, the team performed extensive land surveys, household interviews, and meetings with community leaders to determine what a potential sanitation system could look like and what the community was seeking. At the end of the trip, the team and community agreed

on the design of a system consisting of household-level piping, septic tanks, and a partnership with the local government's engineering office for maintenance. The community also wholeheartedly agreed to Engineers without Borders' mandatory 5% contribution to the budget of the project.

With sponsor support, we can begin the implementation phase of the project and construct the proposed sanitation system. Not only will a successful septic tank system be the first of its kind in this region of Bolivia, it will also be adopted as a standard by the local government and used as a model for future communities in the area. With support we can strive to end the drinking water and sanitation crisis in Bolivia, and save countless lives.



# Barrio San Cristóbal Projected Budget

To successfully implement the next phase of the Barrio San Cristóbal project we aim to raise \$50,000. This funding will directly support essential components of the project:

| Category                           | Description                                                                                                                       | Estimated Cost  |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <i>Construction Materials</i>      | Funds for purchasing pipes, septic tanks, ports, parts, equipment rentals, etc.                                                   | \$30,000        |
| <i>Contracting and Labor Costs</i> | Hiring contractors, inspectors, and construction workers to assist student volunteers in the construction of the proposed system. | \$15,000        |
| <i>Community Outreach</i>          | Assisting with health and hygiene education, community engagement, and maintenance of the proposed system.                        | \$3,000         |
| <i>Contingency</i>                 | Emergency fund for unanticipated conditions and scope modifications.                                                              | \$2,000         |
| <b>TOTAL</b>                       |                                                                                                                                   | <b>\$50,000</b> |



# Engineering Resilient Communities

From urban water insecurity to rural housing shortages, communities across the U.S. face urgent infrastructure challenges. Engineers Without Borders at Cornell is delivering sustainable, community-led solutions through two local projects.

In Austin, Texas, we've partnered with the Festival Beach Community Garden to address rising water costs and inconsistent irrigation. Our team is designing a system that integrates stormwater diversion, rainwater harvesting, reclaimed water reuse, and solar-powered pumping, ensuring year-round water access while reducing reliance on potable supply. In collaboration with professional engineers, we support climate-resilient infrastructure projects grounded in local needs.

In Pine Ridge, South Dakota, we designed and completed a Sustainable Housing Unit (SHU) to help alleviate overcrowding on the reservation. This four-person home is equipped with essential amenities and built using affordable, durable, and sustainable methods—guided by full architectural, structural, and MEP plans.

Sponsor support enables us to deliver pro-bono engineering services where they're needed most—while equipping future engineers with the skills and values to lead with impact.



*“Bridging technical skill and community needs—  
engineering with purpose in our own backyard.”*

# Smart Farming for Sub-Saharan Africa



Crop disease outbreaks, such as Northern Leaf Blight (NLB), threaten food security and economic stability for farming communities across Sub-Saharan Africa. Caused by a fast-spreading fungus, NLB can devastate entire maize harvests if not identified early. To address this, Engineers Without Borders at Cornell is developing an open-source, non-commercial system that combines aerial and ground-based robotics with machine learning to detect early signs of disease in the field.

Our Digital Agriculture Subteam is building an integrated solution using an NDVI-equipped drone to flag potentially affected areas from above, and an autonomous ground rover to offer a more precise assessment of flagged crops from beneath the canopy. The rover captures high-resolution images of plant leaves, which are then analyzed using deep learning algorithms to detect NLB lesions.

The results are delivered through a user-friendly software interface that helps farmers and researchers pinpoint outbreaks at the individual plant level, enabling timely and targeted response.

For more detailed information about the Digital Agriculture project we welcome you to visit the following references:

- [news.cornell.edu/stories/2019/07/land-and-air-students-detect-crop-diseases-tech](https://news.cornell.edu/stories/2019/07/land-and-air-students-detect-crop-diseases-tech)
- [ewb-dig-ag.org](https://ewb-dig-ag.org)



*“Where agriculture meets engineering—we dig in with communities to cultivate sustainable futures.”*

# Tech for Sustainability & Equity

Engineers Without Borders at Cornell is leveraging software to advance sustainability and equitable access within our local community. In collaboration with Cornell Wardrobe, our team has developed a mobile application that allows students to rent professional clothing



directly from their phones—helping reduce financial barriers to career opportunities while promoting circular fashion. Built using Swift and Firebase, the app is on track to launch as a Minimum Viable Product (MVP) later this year. To further support operations, we implemented a real-time inventory management system using Monday, Make, and Firebase.

As part of our broader commitment to climate action, we've also partnered with the Tompkins Climate Fund to develop a user-friendly carbon offsetting app. Built with React Native and Expo Go, the platform enables local residents to track their environmental



impact and contribute to the Finger Lakes Climate Fund, which invests in sustainable energy projects across the region.

Our new partnership with Ithaca ReUse supports shared goals of reducing waste and building resilient local systems—underscoring the power of community-focused tech for driving sustainable change.

*“Building software solutions that empower under-resourced communities across the U.S.—making technology work for everyone.”*

# Backing What We Build

Listed below are the specific materials funded by your donations. We highlight how your contribution directly supports the essential infrastructure that improves lives.

*Your support brings these vital systems to life—piece by piece.*

## International: Sewage Management in Bolivia

|          |                                                                                                                                               |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| \$100    | <b>Fund 1 Meter of Sanitary Sewage Piping</b> Each meter laid helps connect a household to safe, sustainable sanitation.                      |
| \$5,000  | <b>Maintain Utility Networks</b> Support yearly repairs and upkeep of essential water and sewage systems that keep families healthy and safe. |
| \$10,000 | <b>Build a Septic Tank Unit</b> Supports excavation, design, and installation of a decentralized septic system for 20+ households.            |

## Domestic Projects: Irrigation in Austin, TX

|         |                                                                                                                          |
|---------|--------------------------------------------------------------------------------------------------------------------------|
| \$150   | <b>Cover 1 Solar Panel for Pumping</b> Powers irrigation systems using renewable energy.                                 |
| \$750   | <b>Fund Rainwater Harvesting Cistern Design</b> Helps collect and store water for year-round use in drought-prone areas. |
| \$2,500 | <b>Support Drip Irrigation System Materials</b> Provides the piping for sustainable irrigation in a community garden.    |

## Software & Digital Agriculture

|         |                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| \$100   | <b>Sponsor a Server or Data Hosting License</b> Keep our tools free and accessible for students and partners globally.                           |
| \$500   | <b>Fund Open-Source Tool Development</b> Sponsor the development tools and web services needed to make our solutions a reality.                  |
| \$1,000 | <b>Cover Drone and Rover System Materials</b> Every sensor, battery, and screw contributes to a sustainable solution to agricultural insecurity. |

### Your Name, Their Future

We recognize component-level sponsors directly in our design packages, documentation, and community reporting. For major contributions, naming opportunities are available (e.g., "Stantec Community Septic System").

# Supporting Our Work

## 1. EWBCornell Gift Fund

You can sponsor us through our Giving to Cornell page which can be accessed by scanning the QR code or by copying and following this link:  
<https://tinyurl.com/ewb-cornell/>



## 2. Donation Form

You can also sponsor us by filling out the donation form on the last page.

## 3. Invoice

If the other methods do not work, contact us at [ewb@cornell.edu](mailto:ewb@cornell.edu) and we can set up an invoice.

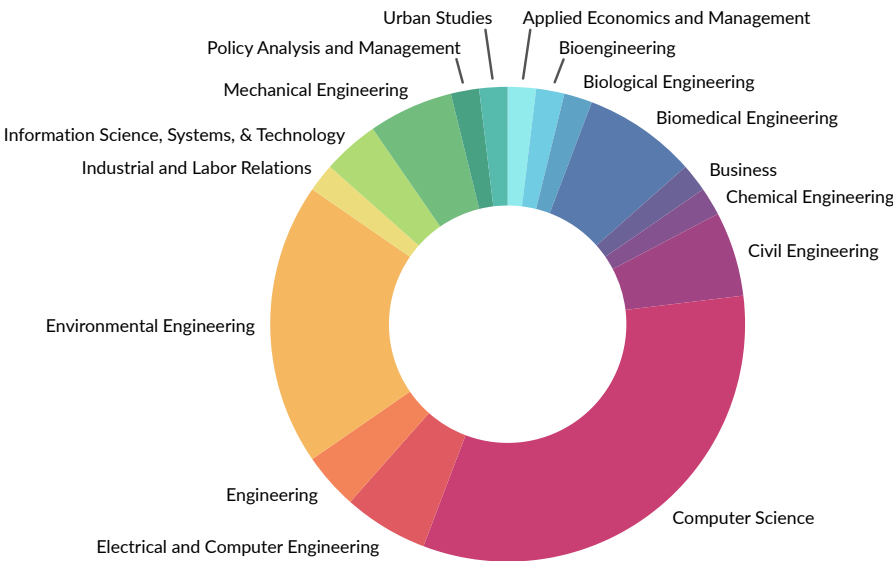


# Our Team



Our wonderful members are the vitality of Engineers Without Borders, Cornell. From focused work sessions to relaxed socials on Cornell's Libe Slope, our engagements through EWB have helped us to form a tenacious connection not only with the communities we serve, but with each other. From a variety of states, social backgrounds, colleges, and fields of study, we have formed a community in which our unique individual qualities may be united under a shared commitment towards service.

We have  
**52**  
members,  
**31**  
of which are  
female...  
from  
**5**  
inspired  
subteams and  
**16**  
diverse fields  
of study.





ENGINEERS WITHOUT BORDERS | CORNELL  
*Over The Years*

# Donation Form

## Donor Information

Name / Organization

Organization Address

Telephone Number

Email Address

Organization Website

## Donation Information

Donation Amount (\$) \_\_\_\_\_

*\*Donations to Engineers Without Borders at Cornell are tax-deductible.*

Fair Market Value of Donation (\$) \_\_\_\_\_

Do you require a charitable donation receipt?

☐ Yes

☐ No

Notes

*You may choose to outline any specific requests here. The team treasurer is also available to take more detailed requests (contact at the end of the page).*

Signature

Date

Please mail forms made out to "Cornell University" with the memo "Engineers Without Borders at Cornell" to:

Cornell University, Box 37334,  
Boone, IA 50037-0334

For Gifts in Kind: Please estimate the value of the gift and enclose documentation of donation, and mail it to the listed address.

**With any questions contact:**

Lahari Bandaru | Treasurer  
lb825@cornell.edu  
240.308.5432





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