



YEAR END REPORT

EWB | NORTHEASTERN UNIVERSITY | 2012



ENGINEERS WITHOUT BORDERS USA
NORTHEASTERN UNIVERSITY CHAPTER



FROM THE PRESIDENT

Hi Friends,

As you are about to understand, 2012 was a very full year for the Northeastern University student chapter of Engineers Without Borders. Our groups consistently strives to create a stronger group in Boston and do better project work for our communities abroad. This year has showed achievements on both those fronts.

Both Honduras and Uganda are on the cusp of our biggest implementations yet. As our involvement progresses in both of these regions, we build more trust and understand our communities better. This growth allows us to do better work, producing more appropriate solutions for these villages and creating a more meaningful experience for the students involved.

We are trying to create a new generation of socially conscious engineers with skill sets for solving global poverty. In order to do this, we are intentionally focusing on the impact our group has on the students involved. The College of Engineering has stepped up to support this mission, awarding us the Dean Scranton Fund grant for the purposes of student betterment. This gives us the freedom to run student programs, while still spending donor money on project expenses. This year alone we sent 7 students to the international conference, 22 students to the regional conference, and had over 65 attendees at our first ever Bootcamp!

None of this could happen without the whole network that supports us. For a group of students with limited real world engineering experience, we are able to design and implement significant projects. This is thanks to the network of mentors, faculty, alumni, and professional engineers who are invested in and facilitate our success.

We are also aware that our donors are particularly generous with us. EWB-NEU's fundraising and spending do not compare to an average student groups, and that allows for a global impact that is exceptional. We would not be able to do this work without the support of our donors.

Whether you are picking up this report as an introduction to EWB or have been involved with us for years, we look forward to building a strong relationship with you.

Thank you again to the many people who have come together to make this year a success.

Caitlin Candee

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Caitlin Candee

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VISION AND MISSION

Our VISION is a world in which the communities we serve have the capacity to sustainably meet their basic human needs, and that our members have enriched global perspectives through the innovative professional educational opportunities that the EWB-USA program provides.

Our MISSION -- EWB-USA supports community-driven development programs worldwide by collaborating with local partners to design and implement sustainable engineering projects, while creating transformative experiences and responsible leaders.

THE NEED



Honduran girl washes laundry as a horse drinks from the same water source.

894 MILLION people worldwide – more than one in eight - don't have access to safe water.

(UN Water)

The United Nations estimates that Sub-Saharan Africa alone loses **40 BILLION HOURS** per year collecting water; which is comparable to an entire year's labor in all of France!

(UN Water)

The weight of water that people in Africa and Asia carry on their heads is commonly **44 POUNDS**, around the same as the average airport luggage allowance.

(UN Water)

50% of pumps in Africa fail after 2 years.

(Water For People)

This is why we make a long-term commitment to our villages and work with them to design solutions that they can and want to maintain.

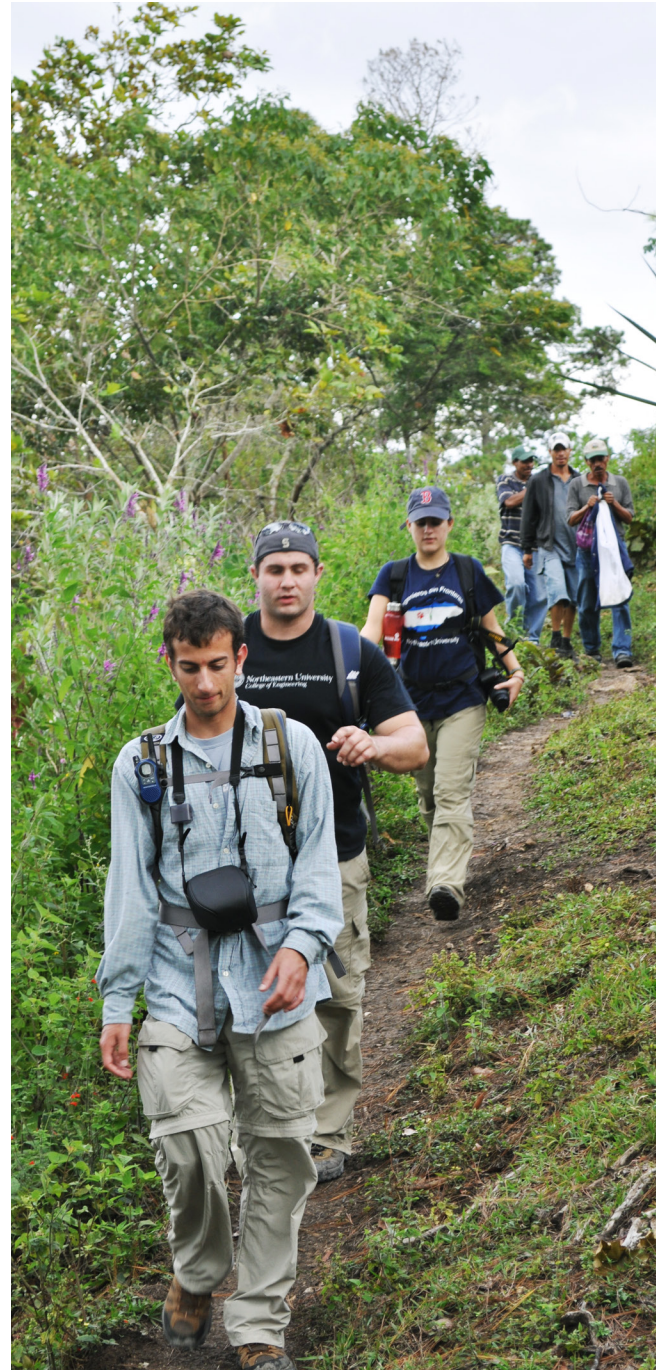
HONDURAS

For the past year, we have been working to develop the most appropriate design for a water distribution system in El Carrizalito, Honduras. The new system will eliminate the need to carry water uphill from the current source to the village. This will be the first water distribution system designed by the Honduras program where the source is below the village precluding a purely gravity-fed water system.

Over the course of the year, we have continued to communicate with the community; we have received several letters from Dionisio, our local contact. He has kept us updated with monthly flow rates from the water source, data on the economic situation of the village, and news from the Water Board. One important update was the construction of a new road near the village that could potentially aid in the construction of the system.

Using the information Dionisio has provided and data we collected on previous assessment trips, we have chosen a design that best addresses the needs of the village. Many alternatives were considered, including: rainwater catchment, a drilled well, and pumping from the existing source using diesel, solar or electric power. We conducted a rigorous alternatives analysis and came to the conclusion that using electrical power to pump water from the existing source is the best solution. We are working with the national electric company to extend the power grid to the village, which will not only allow us to power a pump, but also eventually allow the villagers to have electricity in their homes for the first time.

During implementation for El Carrizalito we will check up on the Los Planes water distribution system. The monitoring and evaluation of this five year old system will help inform our future work.





UGANDA

In 2012, EWB-NEU worked diligently to finalize the design for our most complex water project yet – a community-wide water distribution system for Bbanda, Uganda. Groundwater will be pumped from a well to an array of tanks on a hill, from which multiple distribution lines will service 12 tap stands. The system will provide the only clean, reliable source of water for the village.

To help us design the most efficient system, we conducted an alternatives analysis in January 2012. Using data from assessment trips taken the year before and new research done in Boston, we analyzed the options for each component of the system – pump, power, pipes, tank, and tap stands, and selected the most viable option for each. After completion of the Alternatives Analysis in March, we developed a preliminary design with the help of seniors in the environmental Civil Engineering Capstone. As the team worked toward the ambitious goal of an August implementation, we decided that a final assessment trip to Bbanda was necessary to ensure the accuracy, completeness, and appropriateness of the design. Such a final design could only be accomplished by first-hand involvement of the community in the planning and decision-making process.

This August trip – comprised of all first-time student travelers – allowed us the opportunity to make contacts with local equipment suppliers and an in-country NGO, examine similar water systems in the area, and finalize arrangements with the community and local government. With data gathered on this trip, we enriched and finalized the design, while pursuing funding from the local government through two additional reports. As we work through final design challenges and make pre-construction arrangements with the village, we excitedly anticipate the start of construction in Summer 2013.

NATIONAL & REGIONAL CONFERENCES

Every fall, EWB chapters in the Northeast Region gather at a host institution to share ideas and solutions in a collaborative atmosphere. This year EWB-NEU sent over 20 members to the Northeast Regional Conference in Philadelphia. The group was composed of officers and new members alike, as well as an EWB-NEU alumnus and our Faculty Advisor. For the officers, it was an opportunity to learn best practices from leaders in the field and other successful chapters. As a very strong EWB chapter, we presented on long-term chapter sustainability (how to maintain chapter quality through transferring knowledge between leadership). Our alumni member also presented on chapter management, and our Faculty Advisor presented a technical lecture. In addition to gaining a fresh perspective from speakers and forming connections with other chapters, new members realized the importance of our relationship with EWB-USA. New members felt the conference “acted as a gateway into the group.” Members became more familiar with each other, creating better working relationships. As the weekend progressed, our members became more open to asking questions and expressing ideas for bettering our chapter and our programs.

EWB-USA also hosts an International Conference every other spring. These events focus more on the big ideas behind EWB: international development, sustainability, water scarcity, community relations. In April 2012, an educational grant from the Scranton Fund allowed EWB-NEU to send seven members and both of our advisors to take part in the discussions and lectures. To get the most out of the Conference, the group split up to cover all the sessions. Notes were then compiled, and presentations were made to share the newly gained knowledge with the whole group.





JERRY CAN CHALLENGE

2012 also marked the return of the Jerry Can Challenge. To further engage our membership as well as the greater student body at Northeastern, the group decided to hold the challenge during the November International Opportunities Fair sponsored by Northeastern's Co-op Connections office. Members, students, faculty, and passersby were invited (and in some instances coerced) into carrying a 40-pound jerry can full of water around the outside of Northeastern's Curry Student Center. This quarter-mile trek represents only a portion of the typical distance people in developing countries walk in order to procure water for their families – as well as the time and effort that it demands. This simple demonstration helps increase the awareness of water scarcity that exists across the globe and reminds us of the human catalyst behind EWB-NEU's projects.

BOOTCAMP!

Through this activity where we laid out a simple design for this town, I was reminded of all the skills I learned in Engineering Design, and the full value of what I learned in that class finally took effect.

Maria George
Civil Engineering,
2016



To kick start the fall semester, EWB-NEU hosted its first ever Bootcamp! in late September. The daylong program – a mock project – simulated the EWB project schedule. Although intended to be a crash course for new members, all EWB-NEU members were welcome to participate. Bootcamp! was our best answer to the question new members always ask “what does EWB-NEU do, exactly?” Members at all levels were able to partake in stages of the process they missed and anticipate future stages. All members achieved a better understanding of EWB and what makes one of our projects successful, or not. The importance of listening to the needs of the community was reinforced as the program progressed from assessment and analysis, to design and implementation, and lastly to monitoring and evaluation.

LOCAL INVOLVEMENT



EWB-NEU hosted girls from Fontbonne Academy to show them what we're all about and get them interested in engineering.



EWB-NEU participated in a local Habitat for Humanity event!

STUDENT IMPACT

The world is in desperate need of engineers with these skills and commitment to sustainability and global poverty reduction.



Joining a student chapter within Engineers Without Borders has truly enriched my academic career by exposing me to a multitude of professionals, leaders and worldwide development issues. I have immersed myself in an amazing organization driven to make a difference within communities in need of sustainably meeting their human needs. I have received the incredible opportunity to travel to a village in Honduras and expose myself to hands-on experiences by working directly with the locals and gaining technical engineering skills during the implementation of the project."

Julieta Moradei
Civil Engineering
2016

EWB has been immensely beneficial for my education during my time at Northeastern. It gives me the opportunity to take on a level of responsibility not offered in class, or even on co-op. Managing this project has given me some insight into engineering challenges I wouldn't otherwise be exposed to until deep into my professional career.

Kevin Rathbun
Uganda Program Director
Civil Engineering
2014



FINANCIALS

REVENUE	AMOUNT	PERCENT
Corporate	\$19,300	36%
Personal Contributions	\$17,331	33%
Grants	\$14,000	26%
Community Groups	\$1,301	2%
Other	\$989	2%
TOTAL	\$52,921	

EXPENSES	AMOUNT	PERCENT
Honduras Program	\$8,537	30%
Uganda Program	\$12,449	43%
Student Betterment	\$4,964	17%
Administrative	\$2,843	10%
TOTAL	\$28,793	



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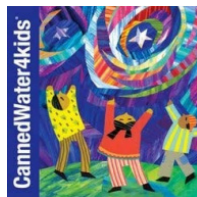
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... and to all our other wonderful donors as well, thank you!

Americans Caring, Teaching, Sharing (ACTS) | www.actshonduras.org

The mission of ACTS is to promote sustainable programs for health, education and development in collaboration with rural Honduran communities and to foster cross-cultural understanding.

Sustainable Harvest International (SHI) | www.sustainableharvest.org

Founded in 1997 by Returned Peace Corps Volunteer Florence Reed, Sustainable Harvest International addresses the tropical deforestation crisis in Central America by providing farmers with sustainable alternatives to slash-and-burn agriculture.

Friends of the Sick and Poor (FOSAP) | www.bbanda.org

Friends of the Sick and Poor is a community based organization designed to improve the quality of life for underprivileged villages in Uganda who have been devastated by poverty and disease.

OUR PARTNERS





HOW TO DONATE

EWB-NEU is growing and becoming stronger, but we need our donor and sponsor support to grow with us. Help from you makes our work possible.

Please find information below on how to donate. All donations are tax deductible.

Online:

www.ewb-usa.org/donate

Click "Donate Now"

Please select "Northeastern University Chapter" from drop down menu

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