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Spring 2014, Engineers and Students Without Borders Create Change in Developing Communities

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University of
New Hampshire

International Educator



The Newsletter of UNH Global Engagement

Spring 2014

ENGINEERS AND STUDENTS WITHOUT BORDERS CREATE CHANGE IN DEVELOPING COMMUNITIES

Emeriti Council Student International Service Initiative Grant

Student organizations that engage in international service, like EWB or SWB, can benefit from this exciting new grant opportunity (up to \$10,000!) to bring their knowledge, enthusiasm and expertise to solve real world problems in developing areas of the world. [Learn more >>](#)

Students at the University of New Hampshire tend to spend their time worrying about classes and exams, club meetings, and plans for the upcoming weekend. Thankfully, we do not have to think about how— or if— we'll be able to get food or clean drinking water. From the time we leave our dorm rooms till our last return at night, everything is accessible. These are just a few of the many things students at UNH (including students involved in the UNH chapter of Engineers Without Borders and their sister organization UNH Students Without Borders) take for granted and often don't fully appreciate. These particular students, however, have a firsthand understanding that our easy access to these resources is not the case for many around the world. While for most of us here at UNH, our biggest problems may be running late to class, other communities struggle with complex problems like access to clean drinking water.

Engineers Without Borders-UNH and Students Without Borders-UNH travel team members learned directly about the many problems within their partner communities around the world. In Uganda, the high cost of transportation restricts many teachers from attending school for the full five-day school week. The classrooms are cramped with 170 students inside a 30-square foot room. Lack of restrooms with proper doors make many female students too uncomfortable to attend school. And in order to collect the water necessary for drinking, cooking, and washing, family members must walk more than a half mile one way. Similarly in San Pedro de Casta, Peru, a small community tucked away in the Andes Mountains, most people are in dire need of many essentials, including clean water and basic nutritional information.

The EWB-UNH chapter has traveled to the small town of Lukodi, Uganda, three times since 2011, cementing a relationship with the community as well as with partner non-governmental organization *Child Voice International*. Members of the group have focused their efforts on providing clean drinking water for Lukodi. In January 2014, five EWB students had the chance to travel there with their professor and mentor, Tom Ballestero to continue the clean water initiative. For the two weeks the students stayed in mud huts at the CVI Lukome Center. The center was near the local market, primary school, and the wells the team planned to disinfect. The housing provided was similar to the local style, but had three sets of bunk beds and a cement floor. Students found it difficult to maintain their American hygienic habits while being restricted to using bottled water to brush their teeth and limited, precious well water to shower. The locals would bathe by using a single gallon of water in a wash basin, while UNH students used five gallons of water from a solar camp shower hung on the back of their huts. This was an eye-opening experience for all the students involved because they were immersed in the Ugandan community and forced to step outside their comfort zone. A [video](#) of their work was put together by team member Nicolette Niemiec.

During the January trip, tasks included teaching the community how to maintain the pumps by referencing a pump



UNH Engineers Without Borders students met with St. Martin's Primary School PTA in Uganda to discuss and sign the memorandum of understanding

maintenance manual compiled by the group and educating residents how to prevent contaminated surface water run off from entering into the wells. Students also assessed what future projects that the community would benefit from, particularly around the structural integrity of buildings on school properties. Findings included the following challenges: teachers spending most of their salary on transportation to and from the school's campus, the lack of adequate restroom facilities, and the terrible condition and overcrowding of classrooms. The group is now in the process of identifying which project would benefit the community the most and be feasible for students to complete.



UNH Students Without Borders travel team having dinner with San Pedro De Casta, Peru community members

Clean water was also a serious challenge facing Peru's community of San Pedro de Casta. Perched on a ridge at an elevation of 3,200 meters, surrounded by mountains and terraced farms, the community has difficult access to clean water. In June 2013, six SWB students and their adviser and professor Dr. M. Robin Collins, took on the challenge to find a solution to decontaminate their water supply and to construct a better distribution system. The water travels more than 4,000 feet from a mountain spring to San Pedro de Casta through pipelines that are prone to contamination and breakage from old, leaky pipes. When this happens, all too often, animal feces and bacteria contaminate the community's water. E. Coli is a very real and common threat. Due to the impoverished and isolated state of the community, many effective water treatment methods are not feasible. A community slow sand filtration system was suggested as a simple, sustainable solution that would be relatively inexpensive when compared to alternative processes.

Water isn't the only barrier to health in this community. Malnutrition and waterborne illness continue to hurt the population even more. Many people in San Pedro have underdeveloped immune systems as a result of the type and amount of foods they consume. SWB discussed this issue with healthcare professionals, and the root of the problem seems to be that farmers are exporting the richer, high nutrient foods as cash crops, leaving only the lower quality, less nutritious fare for the local population. SWB has plans to set up nutritional education plans, teaching those in this community about what their body needs and how to obtain it. Beyond this, cleaner water will mean that the crops, even the low profit ones, will have higher

nutritional value.



SWB students look at the water distribution box and piping system in San Pedro De Casta



Lukodi woman preparing to fill up her jerry cans at the market borehole



Water Committee members teach UNH-EWB travel team member, Ian Gagnon, to start a fire with sticks

In May 2014, the SWB team will be sending a group of seven students along with Dr. Collins to begin the initial phase of these filtration systems and malnutrition initiatives. A second trip, focusing on maintenance and implementation of full-scale sand filters is planned for January 2015. This trip will conclude the multi-phase plan, meaning a permanent system will be in place, with trained locals to further control and maintain the equipment and education. Hopefully, this will serve as a model to surrounding communities, many of whom are facing the same issues of malnutrition and contaminated water.

The work of UNH's Engineers Without Borders and Students Without Borders Chapters greatly benefits the communities they visit, but it does more than that. It gives the students who work on these projects a connection to beautiful far away communities and cultures, and personal relationships with their inhabitants. This is a life-changing experience and gives us unique understandings of and insights into our world. You, too, can be a part of this. Please visit both of our websites, <http://unhewb.org/> and <http://unhswb.org/>, or like us on Facebook to find out more about our work, where to donate, how to become a mentor, and other ways to be involved.

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