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# Engineers Without Borders | College of Engineering

11/02/2015

## Student Teams Visit Mexico and Peru for Innovative Service Opportunities

Nov. 2, 2015 – Members of the Engineers Without Borders Team Mexico have been working with residents in the community of La Salitrera, Mexico for several years to help eliminate arsenic from water supplies using an improved design on a classic tool – the bio-sand water filter.



In May 2015 the team traveled back to Mexico to assess their existing filters and build more. The main goal was to make sure residents understood how to use the filters correctly and teach them how to construct the filters. The trip provided students with hands-on experience in engineering and design. Most importantly, said team leader Nathan Stacey, students learned first-hand that no matter how good an idea is, it's useless unless it can be effectively communicated to others.



“Before they could start the project, students had to write reports to convince EWB of their plans for La Salitrera and why the bio-sand filters would make a positive impact on the community,” he said. “Once in Mexico it was critical that the students communicated clearly about how the filters work.”

Five additional bio-sand filters were built during the trip. Stacey said residents were taught the importance of the project through a workshop and by students visiting families one by one. One member of the community, who was willing to help others build their own filter, was named an expert through his involvement in every step of the construction process. Families that did not receive a filter this trip have access to materials to build their own with help of the local expert. EWB plans on returning to monitor performance and take on other humanitarian projects.

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## PERU

Team Peru has been working with a group of communities in Southern Peru over several years. In the community of La Union the main income comes from raising alpacas for their fur and meat. But every year about 50 percent of newborn alpacas are lost to harsh winter exposure. Students sought to design and implement durable, portable alpaca shelters to help protect the animals and the residents' income.





Students went through a year of trial and error during the design process. Not only did the alpaca shelters have to be sturdy enough to withstand high winds and heavy snowfall, they needed to be portable since farmers move their herds throughout the year. The biggest challenge students faced was the limited resources and knowledge of availability of materials in Peru.



Knowing they must be prepared, students walked from shop to shop in Juliaca, an industrial trade center of Peru, bartering for materials they needed. The team learned to be adaptable as supplies were limited. With the materials found,

the team was able to make a high quality prototype. The group had succeeded with a design that met all of the farmers' criteria and more were implemented. Team leader Jared Madsen said, "The most incredible part of the trip was seeing how excited the farmers were to finally have something to protect their alpaca. It was an unforgettable experience to be able to use the skills we have learned from school and other life

experiences to make a difference."