

## Student engineers out to build better world: U of A chapter of Engineers Without Borders puts talents to work in developing nations

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EDMONTON - Kelsey Chegus seriously considered dropping out of engineering at the University of Alberta.

She didn't see herself as the stereotypical student engineer: either the party-hardy type or the quintessential nerd, each focused on textbooks -- and on making money, tightening the bottom line and speeding up production.

Then she joined the U of A chapter of Engineers Without Borders and went to Ghana as a volunteer.

During her four months there, she tried to learn Twi, the local language, lived on \$10 a day and helped people obtain diesel-run machines that could crack palm nuts, mill corn, grate cassava or hull rice, saving them the hours it would have taken to do it all by hand.

"Engineers Without Borders is the reason I stayed in engineering," said Chegus, 20, who is in her fourth year of mechanical engineering at the U of A.

"I started to see the value in the work that I do. EWB provides a social context. It has a human side to it."

Thousands of other students are on the same wavelength, searching for a social conscience beyond the boardroom or textbook.

Since its launch in 2000, Engineers Without Borders has become the fastest-growing development organization in Canada. In just five years, it has grown to 12,000 members in chapters at 24 universities, said national spokeswoman Brenna Donoghue.

And significantly for a male-dominated faculty, the group is evenly split between men and women.

Engineers Without Borders has sent 150 students from across Canada to Africa, the Philippines and Haiti to work with partner organizations, bringing technology to people in the developing world to improve their standards of living.

In Zambia, where farmers have traditionally hauled buckets of water by hand to feed their crops, student volunteers helped them operate treadle pumps, spraying water over their fields while walking in place as if using a StairMaster.

In Burkina Faso, a local group got help designing an improved shea nut grinder so the local crop could be made into upscale creams by cosmetics companies.

"It's engineering with a lot more focus on people instead of building or technology," said Danny Howard, a fifth-year mechanical engineering student at the U of A who just returned in August from a four-month stay in Ghana.

"I wanted to focus my energy on something that wasn't completely profit. ... It was incredible. I was able to apply my engineering skills in something I value."

In Ghana, Howard, 22, saw women walk five kilometres every week to a mill, carrying 16 kilograms of corn on their heads. They also walked four kilometres to and from the local well twice a day and made other trips for firewood, often keeping their daughters home from school to help with the hard labour that could last from 4:30 a.m. to 10 p.m. Some days, Howard sat with the women and helped them process their shea nuts, immersing himself in the lives of the people he wanted to help.

Working with a non-governmental group called Kite, Howard helped find women's groups and entrepreneurs interested in buying the same diesel-powered machines that Chegus worked with. The women saved time, Howard said, and earned extra money that could help send their daughters to school. During his stay, he met only one girl who had been through junior high.

Howard and his counterparts among the Engineers Without Borders at the U of A have started to look at how to change the university's engineering curriculum to incorporate some of the group's values and viewpoints. Five other Canadian universities are already doing just that, Donoghue said from Toronto.

Currently, "social issues aren't talked about," said Navid Tabatabai, a U of A student who also volunteered in Ghana this summer.

Students can take individual classes on ethics or environmental engineering, but club member Justin Wheler said students rarely look at how projects or companies affect other countries. An oil company might maintain tight pollution controls and pay workers well in Alberta, but lower their standards when they expand to other countries.

Wheler and Tabatabai said they want students and professors to look beyond their back doors and bring humanistic thinking -- not just technical expertise -- to their projects.