

## Engineers Without Borders

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As Wiess College senior Abby Watrous opened her eyes each morning in Foutaka Zambougou, Mali, she was greeted by silent eyes watching her and the other Rice students. Those eyes had not seen a life of luxury, only the mud walls of their village's homes and the sick faces of their friends and family.

"There were people constantly watching us," she said. "We would fall asleep at night, and they'd still be talking around the fire watching us. Then we'd wake up, and there would be people watching us wake up and eat breakfast."

Watrous, a bioengineering major at Rice, rolled over on those same mornings to look at her fellow travelers, Martel College seniors Mike Higuera and Tamar Losleben. The trio joined students from the Colorado University chapter of Engineers Without Borders (EWB) this past May to bring clean water to Foutaka Zambougou's residents.

Losleben said she had done international service projects before embarking with EWB, but her previous experiences



**Rice students Abby Watrous, Mike Higuera and Tamar Losleben traveled to Mali in May as part of Engineers Without Borders. The trio has now formed Rice's own chapter of the national organization.**



**A vital part of Engineers Without Borders is teaching members of the community as they work — in this case, about catchment basins and wells — so the villagers can, in turn, share what they have learned with other communities.**

could not compare to her trip to Mali.

"It was really inspirational for me," she said. "We were welcomed by the community. So much so that they told us to come into any of the houses and join them in any activities."

On the first morning, the group set out to begin work on the village's rainwater catchment basin. As they neared the site, they saw nearly 80 men waiting with tools to help build this project.

Higuera, an electrical engineering major, said the idea behind all EWB projects is for the community to provide the people to build each project. Since they have built the catchment basin and dug wells, they know how each one operates and can, in turn, share the technology with other communities so the project is not limited to one area after the EWB team leaves.

"One of our hopes with this village is since they have built [a rainwater catchment basin], they know how to put it together and hopefully they can go to other villages and help them build one too," he said.

To help the village with their water-supply problems, the EWB team also dug two 300-foot-deep wells to provide the village with ample clean, fresh water. A professional engineer taught the

village's well experts how to repair a deep-well pump that had been broken since 1986. This took the village from one working well up to a total of four sources of fresh water.

To express their gratitude, the village presented the EWB team with a cow and a piece of land near the village. The animal was a lavish gift, providing a feast for the entire village followed by an evening celebration near the end of the team's trip. Losleben said the village members also showed their appreciation for the team's work through dance and music.

"They sang a song about each of us," she said. "We couldn't understand though, because it was in Bambara, which is the language they speak there. We could hear our names every once in a while."

Since returning from Mali, the seniors have not forgotten their experience. The three have organized Rice's own chapter of EWB and elected officers to ensure the group continues after the trio graduates in May. Losleben said there has been a strong response from students already.

"Right now, we're trying to get people involved in meaningful ways," she said. "We'd like to get as many Rice students out in the field as possible."

The Rice chapter of EWB is currently searching for a community to host the Rice team this spring. The group would like to go back to Mali, because the quality of water is still an important issue to address there, Losleben said. They are also exploring other options such as Mexico or Haiti that have had previous involvement with EWB.

"We'd like to continue our involvement with Mali, but we have some concerns about it being far away and the expense to get there," Losleben said. "Continuity in the projects is really important in helping them be sustainable."

Since EWB is open to all majors, co-presidents Losleben and Watrous are planning workshops to teach members the necessary skills to go out into the field, such as mixing cement and surveying land.

"While we were there, we realized not everyone will have the skills they need," Losleben said. "Even with my degree [environmental engineering], I don't know if I would get those skills."

Watrous said this trip exposed her to a different side to engineering. "When you're doing something in the classroom, it all works. All the numbers fit together perfectly," she said. "But when you're in the middle of Africa, and you don't have the right supplies, it teaches you to be more flexible. It's a good problem-solving skill to have."

Losleben said her experience in Mali showed her personally what to do after graduation. She said she wants to give communities in developing countries simple solutions to meet their basic needs.

"I know that I'm most happy when I'm working with people and able to see how it changes their life almost instantly," she said.



**Among the projects the team completed was repairing a deep-well pump that had been broken since 1986. While in Mali, the group took the village from one working well up to a total of four sources of fresh water.**