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RESEARCH

Student focuses energy to help Nicaragua

By Elizabeth Giorgi

A Nicaraguan community is receiving a new look at renewable energy because of the work of one University student.

Electrical engineering senior Patrick Delaney combined his desire to travel abroad with his knowledge about renewable energy sources to create a senior project that would allow him to assist in the creation of renewable energy in a poor region of Nicaragua.

In the mountainous region outside Jinotega, Nicaragua, there is no electricity and a very poor economy. By using the resources already there, Delaney hopes to provide the community with increased economic strength.

"In this era of globalization, one of the most righteous things one can do is travel to absorb other cultures," he said. "Justice can only be reached through understanding."

Delaney said he always had a desire to travel and to seek adventure, but when he came to the University, he became extremely interested in global understanding.

In June 2004, he went to Nicaragua with a nonprofit housing organization to educate himself on the situation in the region as well as visit the communities, he said.

The region had many waterfalls that were going unutilized, and he said he thought micro-hydropower would generate a large amount of power for many uses.

The hydropower generators would be powered by the force of the water which would create enough energy for the small community, he said.

Simple things such as the use of lights, small machinery and other electronics are things these people can't use that students tend to take for granted, he said.

However, the main aid to the region Delaney is focusing on is the possible increase in the convenience of coffee production. Coffee farming is one of the main industries of the region, Delaney said.

At this time, these communities can sell only unprocessed coffee seeds for about 30 cents a pound, he said. By using hydropower generators, the coffee farmers will be able to sell processed coffee for roughly \$1.60 a pound, he said.

Delaney said he is going to visit Jinotega over winter break to gauge the community's reaction to the implementation of hydropower, as well as to find a member of the community to be responsible for maintaining the hydropower generators once they are developed.

"I hope that the community is honest with me," he said. "I don't want to make something they don't need."

University electrical engineering professor Paul Imbertson said he worked with Delaney on the project in order to help make it as successful as possible.

The project has changed a lot, but the aspects have changed positively because the machinery is designed specifically to function better for the region, Imberston said.

"Projects have to evolve and it takes a lot of perseverance to get through them," he said.

Imberston said Delaney is working very hard to make sure the project is done well.

Minnesota Studies in International Development Program Director Chip Peterson said volunteer work such as Delaney's is a great way for students to learn about underdeveloped countries.

Peterson said he urges students to look into ways they can combine an international volunteer experience with their career.

"Whether in this country or in other countries, we need to see what this world is like through the eyes of others," he said.

Resource center adviser in the learning abroad center Scott Daby said students sometimes don't realize all the options they have when traveling abroad.

Beyond study abroad programs, the University works with partner programs to provide students with work, internships or volunteer opportunities in other countries, he said.

"(Students) learn as they go about communicating in a different country and working in a different cultural context," he said.

Some students may be discouraged by the program fee that pays for their travel, room and board; however, the students will usually get a good deal for their money, Daby said.

One of Delaney's concerns is how the project will be funded, but he has planned to attract companies that are interested in advertising their support for renewable energy, he said.

By gaining sponsors there will be money to fund the project as well as to implement a program in the area, he said.

The long-term goals for the project include a series of videos and information that Delaney hopes to use to educate the Twin Cities community and local high school students about the importance of using renewable energy.

"It is pretty self-evident that energy consumption is an issue today," he said.