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University of Minnesota senior Patrick Delaney illuminates himself with a solar-powered light he is helping develop for use in remote villages in Nicaragua. He and other engineering students at the university are trying to create a powerful lantern they hope can be easily and quickly constructed by people in the Central American country.

CHRIS POLYDOROFF, PIONEER PRESS

Solar lighting

(continued)

... they were not looking for a light bulb or a washing machine. They were looking for a task light they could carry out to the barn or field, in their homes to do some reading or educate their children," he said.

Delaney's observations and questions evolved into a senior project with other students to create a durable, powerful lantern with a battery powered from solar energy, one that can be constructed easily and eventually mass-produced by people in Nicaragua. While still in the early stages, it shows the promise of not only solving a practical problem but creating a vital product that can be built and sustained in Nicaragua by the people who need it most.

Delaney didn't start off as an engineer but had a longtime interest in helping people in poor nations. He learned to speak Spanish during summer jobs for a local nursery working alongside migrant workers.

When he got to the U, "I was originally kind of a clueless, naive little freshman," he said. "I thought that this (engineering) was going to be the best way of fulfilling my passion of helping the developing world. I just thought [illegible] way to do it."

Earnest and well-organized, Delaney prepared his own list of questions to help this reporter get the most from a short phone interview. He had also written down the answers and was prepared to e-mail those to make the writing easier.

"What makes him tick is a little different" than the typical engineering student, said Paul Imbertson, a professor at the university's Institute of Technology whom Delaney sought out after returning from Nicaragua. He didn't have the technical or math skills that usually come with someone interested in technology, "but he was much more capable of expressing himself, and a lot more confident," Imbertson said.

The pair discussed the best energy source for the project and looked at wind and hydropower before settling on the sun.

In the Nicaraguan mountains, Delaney had met one of the better-off farmers who owned a solar panel that powered some incandescent bulbs.

That power could be packaged into an ultra-bright light using state-of-the-art LEDs creating light nearly 50 times more useful than a conventional bulb while producing less heat. Combining that with a solar panel and a battery, Delaney saw all the ingredients for an affordable way to light a 12-foot-by-12-foot room, the size of a typical village home.

The project continues, though solar [illegible] and [illegible] says he has spent about $1,500 in the past two years on the project; he works on a shoestring with a donation from one of his grandparents and a summer landscaping business.

"He has a different attitude," Imbertson said. "So often, you see people who expect to be able to walk in and fix everything with fancy, bright, shiny technology. He realizes it's about cooperation ... he's continually collecting ideas from people, passing on ideas. He's not selfish about any of this. It's all about getting stuff done."

Paul Tosto can be reached at [illegible]

PATRICK DELANEY

Age: 23

School: University of Minnesota, senior, electrical engineering

Notable: Bringing light to remote areas of Nicaragua. Besides Delaney, other engineering students working on the project include Lacey Nielsen, who just returned from Venezuela; Valentina Michelson, who Delaney says lived in an off-grid power location for five years in the Republic of Georgia; Omkar Deodar; Adam Flink; and Ther Xiong.

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