Light 4 A Village

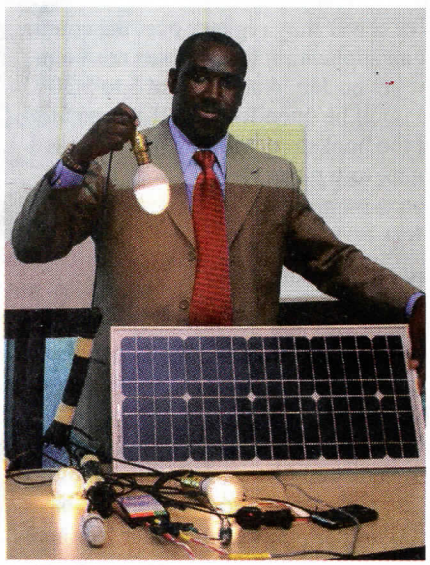
WVC Technology and Learning Center Coordinator

Wenatchee Valley College Teaching and Learning Center coordinator Dr. Claver Hategekimana grew up without electricity in his home in Rwanda. He and his siblings completed their homework by the light of kerosene lantern, wood fire or candles. Sore eyes and headaches were a common side effect.

"After coming to the states, I looked back on my childhood and felt that I wanted to give back," said Hategekimana.

In college he had the idea to develop a solar energy system to light African homes, but solar equipment was more expensive then and he was a college student without the financial means to pursue his idea further. Several years ago, after completing his doctoral degree and coming to work at WVC, he began work on his initial idea even though his family home in Rwanda is now connected to the public grid.

"I knew I needed a package that could do three things – be an affordable kit that works well, eliminate the need for house wiring and the expertise required for installation," Hategekimana said.



Dr. Claver Hategekimana exhibits his solar kit project at the Greater Wenatchee Area Technology Alliance (GWATA) Innovative Showcase.

During the process, he enlisted the help of Zack Jacobson, industrial technology faculty. Jacobson's students in the industrial technology-electronics program set to work on a class project. The core of the project was to build a regulated battery charging board capable of supporting a system with a standard 12-volt battery, three lights, a cell phone and possibly a radio, at a lower price than the commercially-available part.

Hategekimana used his personal funds to purchase parts and equipment needed for the class to test the prototypes. In the end, the commercial part was proven more cost effective, but the class helped with other equipment efficiencies.

"Through the process, students learned about the research and development behind many modern electronic devices," Jacobson said. "I like to see my students and co-workers helping others fulfill their dreams; it prides me when they must persevere beyond their initial effort. That's where the real learning happens."

The final project evaluation surveys revealed how students felt about the project. One student said, "If we make this possible and actually get to build a lot more prototypes with the help of our community, we will be helping a lot of people from Africa who cannot afford to have electricity, and at the same time we will be giving the opportunity to kids to be successful in their education."

Today, after four years of research and development, Hategekimana's final project, Light 4 Village (www.light4village.com), provides an efficient, inexpensive solar energy system to brighten homes for up to eight hours. The system is simple. The typical African household has three rooms, a living room and two bedrooms, so three LED lights each attached to 30 or 40-foot extension cords are included. The solar panel, solar battery charge regulator, car battery and cigarette lighter socket complete the system. The system can also charge a cell phone, an FM radio or other small appliances.

For Hategekimana the future is bright. "My biggest satisfaction is getting them (the solar kits) in the hands of the people who need them. I also get really energized to connect with someone who cares about less fortunate communities and providing access to basic needs like electricity and clean water, things many Americans take for granted."