Indoor plumbing and working toilets—conveniences that so many take for granted—remain a rare luxury in much of the developing world. For example, more than 650 million people in India lack adequate indoor sanitation facilities, forcing them to defecate outdoors, exposing the population at large to 100,000 tons of untreated human waste annually, and contributing to the spread of diseases that kill 450,000 each year.

Anoop Jain (’09) finds these numbers unacceptable. During a trip to India in 2010, he visited Bihar, one of the poorest states in the country. Shocked by the discovery that in the 21st century millions still did not have access to toilets, he founded Humanure Power, a not-for-profit enterprise that constructs community toilet facilities to decrease defecation outdoors.

Humanure Power has focused its efforts in the remote and isolated Supal district of Bihar, where 1.3 million people defecate outdoors daily. The group opened its pilot community sanitation facility in July 2014. It serves 750 people per day and disposes of tons of waste each month.

“We wanted to concentrate our effort in one area,” says Jain, who studied environmental engineering at McCormick. “I plan to spend the rest of my life doing this work, and we still won’t entirely eliminate outdoor defecation. It’s a tremendous battle.”

In September 2014, Jain received the Waislitz Global Citizen Award, which awards $100,000 annually to a single individual based on four key criteria: global citizenship, impact, innovation, and potential to continue work. With these funds, Humanure Power will construct three more facilities in Bihar.

True to his innovative spirit, Jain’s next step is to redefine waste and treat it as a resource. When bacteria break down human organic waste, they produce methane gas, which can be used as energy. Jain’s team is about to install a system that uses methane to power water filters, which he predicts could produce 2,000 liters of clean water per day and be sold for a small fee to help maintain the facilities.

“We are using technology that has already been proven to work,” Jain said. “We didn’t want the community to be our guinea pigs.”

AMANDA MORRIS