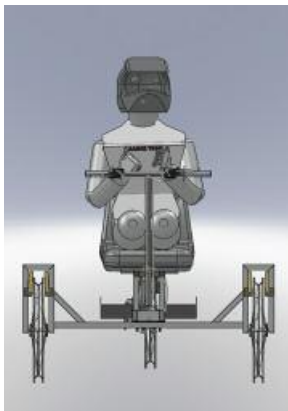


MET solutions to help land mine victims in Mozambique



The winning team — Jacob Cookson, Levi Guimond, Jesse Miller, Matthew Mingo and Sean Theriault — designed a 72-pound vehicle with a push-pull operating system. They devoted more than 1,065 hours from concept through construction. The winning vehicle, as well as innovative features from the four others, will be considered in a final design proposal.

“When someone gets a wheelchair, you give hope, dignity and an opportunity for people to be contributors to their community, as well as creating a means of self-employment.”

— Kim Keeley, Chief Executive Officer and Co-founder of CorePlan International

In the aftermath of civil war, antipersonnel land mines have left scars not only on the landscape, but also on those who live in Mozambique. The World Health Organization estimates that there are about 3 million land mines in the country, which can remain active for decades.

In an effort to help the many land mine victims who face mobility challenges because they have been permanently disabled in explosions, a University of Maine mechanical engineering technology class undertook a senior capstone project to prototype low-cost tricycles. The vehicles were designed to be used by land mine victims with leg amputations or spinal cord injuries.

The idea for the project came from Kim Keeley, chief executive officer and co-founder of CorePlan International, an organization that works to address the needs of disadvantaged youths and young adults. For several years, CorePlan International has been working in Mozambique villages where there is no sanitation, electricity or clean water. It's there that Keeley and her team have seen countless amputee and spinal cord injury patients without access to wheelchairs, “literally living life on the ground.”

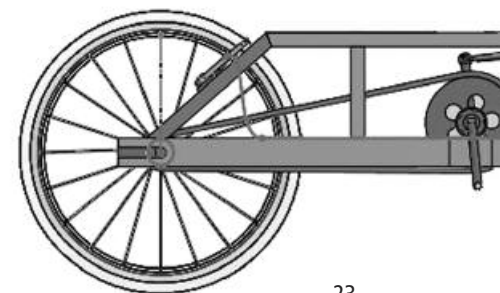
“When someone gets a wheelchair, you give hope, dignity and an opportunity for people to be contributors to their community, as well as creating a means of self-employment,” says Keeley, who was on campus in April for the trialing of prototypes developed by five student teams.

“This project has garnered interest from a major insurance company in South Africa that has expressed interest in manufacturing the wheelchairs in South Africa and Mozambique by land mine victims as a social enterprise,” Keeley says. “Profits from the enterprise will go back into the community to provide training on wheelchair maintenance and repair, as well as literacy and health programs. The next steps will be to take the winning design to Africa to launch the social enterprise.

“This will change lives.”

Repeatedly through the years, the senior projects directed by MET professor Herb Crosby — from innovative wheelchair designs to foot-powered canoes for amputees — have aspired to do just that. This year, the Landmine Victim Mobility Vehicle Project required the students to design a hand-powered, three-wheel vehicle for less than \$200 that, among other features, could be used by an adult to move over hills, sand, mud and rocks, and carry light cargo. The prototypes had to involve simple construction so that repairs could be done by local labor, and include a new, patentable feature.

While such tricycles already exist, they are typically expensive and require complex machines for construction and repairs. ■



Humanitarian Design