

# Engineering students set design in motion

April 12 2010, By Brian Murphy

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Edith Schaeffer knows the features she needs for a wheelchair that can navigate her one-acre garden plot.

(PhysOrg.com) -- Edith Schaeffer remembers learning more than 30 years ago that University of Alberta engineering students had built an aid for a disabled person. Following a sad turn of events in her own life, Schaeffer reached out to the university and got the answer she was hoping for.

"I remembered this friend studying electrical engineering at the U of A built a special, communications key board for a woman who was quadriplegic," said Schaeffer. "So I thought maybe they could build me something I can use to get around my garden."

Getting around is an issue for Schaeffer. Both her legs were surgically amputated above the knee because of infections and, while she's adapted to a regular wheelchair for getting around her house on a farm near Lacombe, "I can't get it out in my garden," she said. "I need to get to my garden because I teach people how to grow vegetables."

For 10 years Schaeffer has been teaching non-gardeners how to grow vegetables and says she's been sending classes of 20 to 25 people home with tons of fresh produce.

Schaeffer knows the features she needs for a wheelchair that can navigate her one-acre garden plot.

"It has to get low so I can work in the soil, and because I have Saskatoon bushes I have to get higher to pick the ripe berries."

Schaeffer called the U of A in January and the old adage, "Timing is everything," was proven true. Her request for help was passed onto a team of mechanical engineering students who were looking for a suitable design project to cap off their course.

Team member Jackie Powell says she got on board with Schaeffer right away. "It appealed to me because it's not just designing an industrial part; it's a unique machine that will help someone's quality of life."

With a design deadline of mid-April, the four students made a couple of visits to Schaeffer's home near Lacombe.

"Our toughest design challenge was keeping the width to three feet because it has to fit through her garden rows," said Powell. The students say the final design combines the best ideas of all four team members.

The [engineering students](#) won't build the actual gardening wheelchair,

but their design will be used by professional engineering companies that have stepped up and volunteered their time and materials to manufacture the device. It's hoped that Schaeffer will take delivery of the machine for the start of the 2011 gardening season.

Team member Tenille Eichorst says there was some frustration during the design project but visits to Schaeffer's farm were the cure. "Edith was an inspiration for us. She calls herself the 'Shepherd of the Hills,' so we were determined to get her back on her land."

Provided by University of Alberta

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