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Students' Creation Increases Wheelchair Maneuverability

By CAROL GENTRY The Tampa Tribune

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TAMPA - Wheelchairs do two things really well: Move forward, and move backward. But they do a lousy job of moving sideways.

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The thing is, people in wheelchairs often need to move sideways to get into or out of a tight space in a classroom or van or movie theater - a problem akin to parallel-parking a Hummer on a crowded downtown street.

Rob Smith of Apollo Beach, publisher of Disabled Dealer, a magazine that displays equipment for the disabled, says he knows of no wheelchair that provides that sideways motion. His own power wheelchair frequently gets trapped in tight spaces, such an elevator. He can't turn around to reach the button, he said, so he's stuck riding up and down until another passenger boards.

"I'm at the mercy of somebody hitting the button," Smith said.

So he's impressed with a sideways-movement adaptor for wheelchairs invented by four students at the University of South Florida's College of Engineering. Jonathan Kio, Kelly Komperud, Josh Lujan and Daniel Bennett created it in the Capstone Design class, a senior-level mechanical and industrial engineering course that confronts students with a problem faced by disabled people and challenges them to come up with a solution.

In this case, the challenge was posed by course instructor Stephen Sundarrao, associate d Rehabilitation Engineering and Technology Program at USF. He gave each of ten teams a problem to solve.

The "lateral wheelchair drive mechanism," as the team called it, has wide wheels that run a the chair's own wheels. It's equipped with a motor that lifts the chair a few inches off the grc the sideways wheels to take over.

Sundarrao helped the students protect their rights to any future royalties on the kit with help McDevitt, director of patents and licensing at the USF Research Foundation. The wheelcha half-dozen projects that the foundation has patented from Sundarrao's program, which rece federal fundings.

Usually, McDevitt's staff would pitch USF patents to investors and companies that could bri market. A lawyer, McDevitt hammers out agreements that let the licensor profit but sends r inventors and the university research foundation, which plows them back into other projects However, in this case, McDevitt said, given the number of patented products likely to come

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Capstone Design class, it may make more sense to help Sundarrao form a start-up compar tech incubator at USF Research Center. Sundarrao agrees.

It's been difficult co-developing a previous student project, a portable wheelchair ramp, with company because of disputes over alterations, he said.

An even better reason for keeping control of development, Sundarrao said, is avoiding the company might buy licensing rights for a much-needed product for the disabled, and then anything with it.

Sundarrao, who spent much of his engineering career in the private sector, has the experie good entrepreneur, McDevitt said. As a member of the board of the National Mobility Equip Association, he gets a good sense of the kinds of products that could sell.

From USF's vantage, she said, it makes sense to grow businesses "that will stick and stay l

Smith, a friend of Sundarrao's, is eager to see the sideways wheelchair adaptor on the mar will be great," Smith said. "I'll get one."

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