

SCSU student goes vertical with standing wheelchair

School helps fund VERTRAN project

By Jerry L. Carter
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Jay Johnson, a senior business student at St. Cloud State University, finds people often shy away from him because he uses a wheelchair.

"Many wheelchairs are unapproachable, intimidating, ugly and awkward," he said. "Many people see a wheelchair and get caught up in the intricacies of its mechanical shape that they miss the person that is in it."

A paraplegic since an auto accident seven years ago, Johnson wants to change those perceptions. With the help of students and faculty at St. Cloud State, he has been designing an electric wheelchair that can be used in a sitting or standing position. He wants it to be affordable, maneuverable, and — most of all — appealing to the eye.

Users will operate the chair mostly from the standing position, Johnson said. He hopes that will improve the circulation problems that come with sitting all the time and self-esteem, because users meet others at eye-level.

Administrators at St. Cloud State have helped supply funding, personnel and equipment to design the standing wheelchair. The effort is being called the VERTRAN project — short for vertical transport.

"We liked a lot of aspects about this project," said Gene Gilchrist, vice presi-

dent for administrative affairs. "Not only does this project utilize several departments on our campus, give students and faculty from varying disciplines a chance to work on a practical project, but the final product may make a portion of the general public more mobile."

Bettering the community and improving access for people who have disabilities are part of the university's mission, Gilchrist said.

"This project is giving our faculty and students real-world challenges," Gilchrist said. "If it is successful it could even create more local jobs and help a lot of people."

Those working on the standing wheelchair say it is revolutionary.

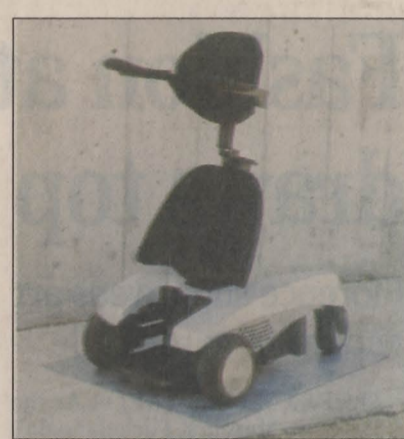
"We are completely redesigning and re-engineering the wheelchair," Johnson said. "This will be the next logical progression in wheelchair technology. It will be like going from the roller skate to the in-line skate."

The chair will look like a modern office chair that sits on a base with wheels, but with more extensive engineering.

Johnson and others are working on a prototype, which could be completed by May. Once the mechanics of the prototype are completed, the wheelchair will be sent to the University of Illinois-Chicago, where industrial engineers will "make it look cool," Johnson said.

If all goes well the new chair could be in production in two years.

Johnson got the idea for the chair in 1991 after he bought another standing wheelchair and was dissatisfied with its appearance and bulky performance.



PHOTOS COURTESY JAY JOHNSON

The wheelchair being designed by Jay Johnson can operate from an upright position (top) or like an office chair (left).

In the past, he said, standing chairs were designed so most of a user's weight was at the front of the chair and they were "very tippy."

Johnson wondered if it would be possible to design a standing wheelchair that put the user in the center of the frame when the user is in a standing position.

After consulting friend Mark Barthelemy, a designer for Cold Spring Granite Co., Johnson realized his idea could be a reality.

"We started to brainstorm and we slowly started to put it together," Barthelemy said. "We wanted a standing wheelchair that would be aesthetically pleasing to the eye, affordable and still be marketable."

Standing wheelchairs can be spendy, costing between \$8,000 and \$20,000, Johnson said. "We also wanted to make the chair attractive and inexpensive. Our chair should sell for about \$7,500."

Johnson approached university administrators with the idea in 1993 and

received \$15,000 in seed money. He has since raised nearly \$360,000 to develop the project.

"It has taken a lot of people to do this," Johnson said. "This project utilizes three schools and nine departments, including fine arts."

Johnson credits much of the project's success to Denise Winkelman, an English student who wrote numerous grant proposals to secure funding.

"If it wasn't for her efforts we could have never done any of this," Johnson said.

Paul Wade, a manufacturing engineer at St. Cloud State who has worked on the project, said remanufacturing the wheelchair has been challenging, but rewarding.

"It was difficult to conceal all the mechanics of the chair, but I have enjoyed working on the project from the ground up."

Johnson, Wade and others interviewed wheelchair users, doctors and others in the health field to build a chair that would benefit most users.