Throughout his career, first as an occupational therapist and now as a mobility researcher, Dr. Ed Giesbrecht has met more than his share of people who get around in wheelchairs. His goal? To find ways to make life easier for these individuals.

“The purpose of my research aligns closely with the purpose of my clinical occupational therapy work – enabling people who use a wheeled mobility device to optimize participation in their chosen activities,” he says.

He asks: “What changes can be made in each area to make these pieces fit together well so individuals can participate in their lives as fully as possible?”

**The Person**

Technology is only as good as the instruction provided. This is especially true for people who use wheelchairs; without learning mobility skills, negotiating ramps and doorways can be difficult, creating barriers.

“We can remedy this by changing the person, which we can accomplish through training focused on developing both the skills and confidence they need to use their chairs more effectively,” says Giesbrecht.

To this end, he and his colleagues have developed and tested software called EPIC Wheels, an interactive home program that provides wheelchair lessons using a computer tablet. Giesbrecht’s studies have found that users of EPIC Wheels experience dramatic improvement in their ability to participate independently, and with increased skill and confidence, both in and outside the home.

**Activities and Occupations**

Giesbrecht is well aware that people using wheelchairs may be unnecessarily limited in their activities as a result of the equipment they use. For example, a power wheelchair might reduce the effort of travelling a longer distance, but is more difficult to use in tight spaces or transport in a vehicle because it is large and heavy.

One of his studies that addresses this looks at the use of hybrid wheelchairs, which are part manual and part power. They combine the lightness and mobility of a manual wheelchair with motors that augment the user’s ability to roll themselves along.

“We found that the power-assisted chairs expanded the scope of activities for which people could use their manual wheelchair,” says Giesbrecht. “It made life easier for them.”

**The Environment**

Giesbrecht also looks at barriers in the environment that affect people's ability to use wheeled mobility devices. One initiative is the development and construction of a winter obstacle course featuring icy ramps, ruts, snow-covered surfaces and other winter-specific barriers.

“Studies conducted using this course will help us to evaluate the experiences of people using wheeled mobility devices in these conditions, as well as test how different types of equipment work in different situations,” he says.

As in all of Giesbrecht’s work, it’s a matter of finding out what changes need to be made to ensure that people can... participate as fully as possible in meaningful life activities.