Researchers at the University of South Florida have invented a wheelchair navigation assistance device that gives the user the ability to go through crowded environments without worrying about hitting other people or unforeseen obstacles.

Power wheelchair users often have difficult times navigating through large crowds and environments with many obstacles; often bumping into people and objects. Wheelchair drivers have to constantly be aware of other people and the obstacles around them.

Achieving full situational awareness from the point of view of a wheelchair driver is a nearly impossible effort. Accomplishing this task would require an array of visual aids covering all directions and the total attention of the driver.

Our researchers at the University of South Florida have invented a wheelchair navigation assistance device as an add on device to help wheelchair users navigate through busy environments. Using sensory information and user-input, the navigation assistance device will allow the user to dictate where they want to go, while the device keeps them from bumping into pedestrians and detected obstacles.

**ADVANTAGES:**

- Actively avoids obstacles
- Does not require additional user input
- System maintains user navigational freedom

*Figure Shows the Ultrasonic Sensor Used in Navigation Device*