



# Wheelchair Caster System

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## Technology description

The objective of the wheelchair caster system (WCS) is to reduce the risk of upper limb pain and injury to manual wheelchair users (MWU) by decreasing the forces required to traverse a side-sloped surface. The device intends to prevent wheelchair drift, by applying a forward biasing force on the caster wheel, thus lowering the forces required by the downhill limb to maintain a straight path. Likewise, the WCS caster mount will serve as the attachment point between the caster and the front frame of the wheelchair. Finally, the device will allow the caster fork and wheel to rotate allowing the user to steer the wheelchair. Advantages: 1) The forward bias can be applied or removed by pulling or pushing an easily operated pin, located on the top of the caster mount housing. The pin has a large cylindrical top, making it easy to grasp for users with reduced hand function. 2) By altering the position of the ball and spring unit, the biasing force can be raised or lowered to meet the needs of the user. 3) The device can be installed on any wheelchair that features detachable caster mounts and can receive any standard caster fork and wheel. Prototype available Provisional Patent Application Filed

## Institution

[University of Pittsburgh](#)

## Inventors

[Mark McCartney](#)

[Andrew Kwarciaak](#)

[Rory Cooper](#)

## 联系我们



叶先生

电 话 : 021-65679356

手 机 : 13414935137

邮 箱 : [yeingsheng@zf-ym.com](mailto:yeingsheng@zf-ym.com)