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## ***TWO MANITOBA SCIENCE STUDENTS SHARE PRESTIGIOUS NATIONAL INNOVATION AWARD***

**MONTREAL QC** (May 19, 2016) Two of Winnipeg's Fort Richmond Collegiate students today captured one of the eight prestigious Ernest C. Manning Innovation Achievement Awards at the 55<sup>th</sup> Canada Wide Science Fair this week at McGill University campus. Over 480 finalists competed with 420 projects for more than \$1 million in prizes.

***Derek Yin***, 17, and ***Himanshu Sharma***, 16, received a \$500 Manning Innovation Achievement Award, and a Silver Medal for their work creating the concept of the *E-Walker*, to formulate a faster and safer stroke recovery with digital sensors. The E-Walker is a digital system with various sensors that attach on medical walkers. These sensors collect data such as distance, speed, and frequency of the leanings by stroke patients. Patients receive feedback on their performance with a wireless-paired smartphone app. A fall detection system is also incorporated on the E-Walker, providing a safer environment for patients.

"The inspiration for this project came from my grandpa who unfortunately had a stroke." said Yin. "As a curious problem solver, I'd started pondering how technology could provide a better tool for stroke rehabilitation. After researching, such a device didn't really exist and that resulted in the start of this project with my research partner, Himanshu Sharma."

Stroke patients have difficulty in current rehabilitation processes which take upwards of 2 months. The E-Walker provides feedback to the patient to adjust their posture and track their progress to improve their motivation during their rehabilitation. The system relies on detectors placed on the wheels which calculate the speed and distance travelled.

Force sensitive detectors on the handles report when the patient leans on the handle, sending out an audio signal notifying them to adjust their posture. By providing this information on their smartphone, patients are able to track their progress and improve their quality of life. In the case of the patient falling down, the program uses detectors that are found in all smartphones to send a message to a nearby emergency medical professional as well as send off an alarm indicating help is needed from anyone in the vicinity. The pair incorporated their device into Yin's grandfather's stroke rehabilitation program. Over a two week period, his grandfather improved his posture, was more confident and travelled longer distances when using his stroller. "The E-Walker system would allow patients to be more driven and attain close to the same they had prior to the stroke" explained Yin and Sharma.

“The calibre and ingenuity of this project proves age is no barrier to innovation,” said Jennifer Diakiw, President of the Ernest C. Manning Awards Foundation. “For the past 24 years, the Foundation has encouraged and celebrated outstanding young Canadians competing at the Canada Wide Science Festival. The 2016 winners are passionate and creative visionaries and we and our sponsors believe supporting them is a privilege, as they are important contributors to Canada’s reputation as an innovation nation.”

Sharma immigrated to Canada from India with his family six years ago. An early introduction to computers when in India ignited a passion for technology and led to software programming and android development.

The Ernest C. Manning Awards Foundation is committed to advancing students’ success as innovators. The Foundation introduced its Young Canadian Program in 1992 to recognize outstanding high-school students at the Canada-Wide Science Festival. Each year, the Manning judging team selects eight winning projects, to receive a \$500 Manning Innovation Achievement Award. From the eight, four are honoured with the Manning Young Canadian Innovation Award, which includes a further \$7,000 prize. More information about the Manning Awards is available at [www.manningawards.ca](http://www.manningawards.ca), Twitter @ManningAwardsCA Facebook/ManningAwards.

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