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Trenton native leads research into spinal cord injury study

By Derek Baldwin
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One of the premier neuroscientists in the world admits he hasn't been back to his home town of Trenton for more than a decade.

But Marc Tessier-Lavigne, 39, can be forgiven — he hasn't had much time for reminiscing.

A neurophysiology Ph.D graduate from the University of London, Lavigne is now a professor at University of California and as such is poised at the helm of some of the most innovative research anywhere on the planet, trying to end paralysis due to spinal cord injuries.

With about 20 researchers under his supervision in a Cal-U laboratory, Lavigne is spearheading the quest to learn more about netrin proteins which have been shown to encourage the repair of severed spinal cord nerve tissue.

For years, a damaged spinal cord has traditionally resulted in partial or complete paralysis because the tissue cannot reconnect, hence the brain can no longer send signals through the spinal cord to other muscles in the body.

While medical progress is being made to cut down the chances of paralysis if a victim is given inflammatories within 24 hours to reduce further swelling and damage to the spinal cord, Lavigne, meanwhile, is working toward more hopeful discoveries using netrins.

His findings, thus far, stem from the study of the embryonic development of the spinal cord in the fetus. When the fetus is growing inside a woman's womb, netrin proteins mysteriously guide the spinal chord to grow from the base of the neck through the body whilst connecting the

right signals to the proper muscles.

Lavigne compared the netrin proteins located at the end of the growing spinal cord, to a "bloodhound on a leash" and is essentially trying to mimic similar growth in damaged adult human spinal cords through the netrin protein to reconnect the tissue.

The problem is, he said, that after a spinal cord has been cut in an adult spinal cord, the environ-

ment around the broken nerves becomes hostile and for unknown reasons the tissues don't reconnect.

"The idea is to use these proteins to coax the cables to grow again," said Lavigne, in an interview from California. "If we can give the tissue the right environment,



Marc Tessier-Lavigne

they will grow back."

The astounding work has propelled Lavigne into the international spotlight, most recently, when he was named by TIME magazine as one of 27 young Canadians who are leaders of tomorrow. Lavigne has also been inducted into the Royal Society of Canada and will be named a Fellow in November.

His findings have also turned heads in the medical world, including Harvard University which offered him the headship of their neurology department.

Lavigne, instead, has decided to stay at California University to head up its Centre of Brain Development.