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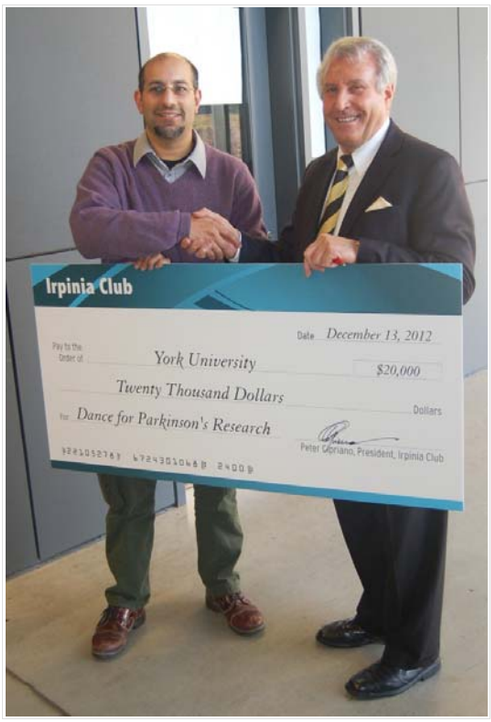
Donation will help fund research into dancing and Parkinson's disease

York neuroscience Professor Joseph DeSouza of the Faculty of Health received a $20,000 donation last week to support his research looking into brain activity in dance and its therapeutic applications for people suffering with Parkinson's disease.

Peter Cipriano, president and representative of the Irpinia Club, was at York to present the cheque Thursday. Cipriano has donated time and energy to various healthcare ventures over the years, including Humber River Regional Hospital, Etobicoke General Hospital, Princess Margaret and Sunnybrook Hospitals, the Canadian Cancer Society and the United Way.



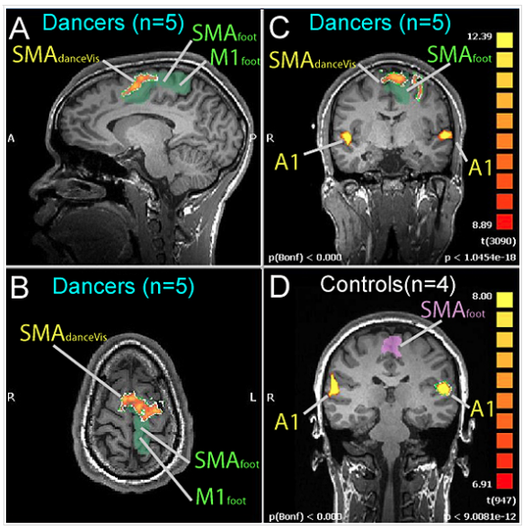
From left, Peter Cipriano of the Irpinia Club hands York Professor Joseph DeSouza a cheque for $20,000 for his research

"It feels fabulous to get early support for our project," said DeSouza, who conducts research out of his lab in York's Sherman Health Science Research Centre. "It will really help this research get off the ground."

DeSouza and National Ballet dance instructor Rachel Bar will expand their research to study the neuromechanisms of dance, rhythm and beat of music, and their potential therapeutic benefits to Parkinson's patients. Parkinson's is a disease of the central nervous system that limits the motor capabilities of patients. They will monitor and record changes in brain patterns of dancers with the ultimate goal of figuring out a therapy to help Parkinson's patients improve their mobility.

"There is anecdotal evidence that improvement in motor function may be achieved, and if we can prove this through scientific research, it could mean a great deal to the quality of life of those coping with Parkinson's disease and their caregivers," said DeSouza.

Preliminary data, conducted by Rachel Bar, showed increased supplementary motor area (SMA) activation in the brains of dancers after listening to music they are practicing and performing dances to, compared to control dancers that are not learning the dance. The researchers are interested in how the brain is overcoming motor difficulties during diseased brain states like Parkinson's disease, and how dance therapy for Parkinson's disease can help these patients can move more.



The sensorimotor regions of the brian activated when subjects visualized dancing to music

Using fMRI (functional Magnetic Resonance Imaging) to determine the learning process, the research team hopes to determine the neural mechanisms that occur between listening to music, learning the dance and eventually the dance becoming an automatic association for the brain – the pre-learning brain and the post-learning brain.

National Ballet dancers were scanned for short periods of time in an fMRI machine before, during and after learning routines to measure the blood flow to different areas of their brain to determine how different areas respond to learning movements. Researchers monitored the neural circuits (medial frontal areas – SMA) that focus on the sequencing of movements. By looking at these highly trained areas of the brain in professional dancers, they hope to conduct further research to figure out therapies for patients that will allow Parkinson's patients to learn new movements.

Peter Cipriano takes a turn in the fMRI

Working in partnership with scientists at McMaster and Western University, the team will train National Ballet dancers to lead dance and movement classes for Parkinson's patients.

"We are extremely grateful for the support of the Irpinia Club and its members," said DeSouza.