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1. **Dr. Angela Auriat** (Supervisor: Dr. Lara Boyd), **University of British Columbia**

Project Title: *It is time to start listening to ‘silent lesions’: the impact of covert lesions on post-stroke recovery*

Brief Project Description: This study will assess the impact that covert lesions (tiny difficult to see lesions that can accumulate) have on motor and cognitive recovery from severe stroke over time.

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2. **Dr. Andrea Bandini** (Supervisors: Drs. Yana Yunusova, Petros Faloutsos, and Melanie Baljko), **University Health Network – Toronto Rehabilitation Institute**

Project Title: *Markerless facial tracking for speech rehabilitation*

Brief Project Description: This project will develop, validate and pilot-test a novel facial tracking algorithm in conjunction with an exercise-based intervention to improve speaking in patients recovering from stroke.

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3. **Matthew Chilvers** (Supervisor: Dr. Sean Dukelow), **University of Calgary**

Project Title: *Brain stimulation and robotic therapy to promote sensory recovery after stroke*

Brief Project Description: This project will investigate robotic therapies in combination with Transcranial Direct Current Stimulation (TDCS) in an attempt to enhance recovery in chronic stroke patients.

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4. **Lucas Crosby** (Supervisor: Dr. Kara Patterson), **Toronto Rehabilitation Institute – University Health Network**

Project Title: *Exploring how rhythmic abilities and self-perceptions shape gait symmetry post-stroke*

Brief Project Description: This project will determine whether the ability to hear a rhythm positively influences the ability to respond to a treatment for walking asymmetry in stroke patients.



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5. **Ayan Dey** (Supervisor: Dr. Brian Levine), **Rotman Research Institute, Baycrest**

Project Title: *Functional neuroimaging of Vascular Cognitive Impairment due to Cerebral Small Vessel Disease*

Brief Project Description: This project will investigate the impact of Cerebral Small Vessel Disease (a pathological condition of the brain's small blood vessels) on brain network function and cognitive decline in those with evidence of significant changes to the brain's white matter on MRI using a combination of behavioural testing and functional neuroimaging.

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6. **Dr. Jodi Edwards** (Supervisor: Dr. Sandra Black), **Sunnybrook Research Institute**

Project Title: *The effect of antihypertensive treatment on stroke severity and post-stroke functional outcome*

Brief Project Description: Using ten years' worth of data from the Ontario Stroke Registry, this study will investigate whether the type of high blood pressure medication stroke patients were on made a difference to their stroke severity and recovery.

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7. **Annette Gower** (Supervisor: Dr. Mario Tiberi), **Ottawa Hospital Research Institute**

Project Title: *Effect of specific activation of D1-class dopamine receptors and exercise in an asynchronous therapy paradigm on stroke recovery*

Brief Project Description: This project will test whether drugs that specifically target a subgroup of dopamine receptors in the brain improve functional recovery of movement skills, when combined with physical training in a mouse stroke model.

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8. **Dr. Olinda Habib-Perez** (Supervisor: Dr. William McIlroy), **Sunnybrook Research Institute**

Project Title: *The effects of bimanual light touch contact on bipedal inter-limb synchronization after stroke*

Brief Project Description: The current study will assess whether simultaneous light touch on both sides of the body can improve balance control in individuals with chronic stroke.



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9. **Dr. Andrew Huntley** (Supervisor: Dr. Avril Mansfield), **Toronto Rehabilitation Institute – University Health Network**

Project Title: *Optimizing clinical assessment of reactive balance control post-stroke*

Brief Project Description: The goal of the proposed project is to determine the combination of conditions and instructions that optimize the “lean and release test” to inform clinical practice and fall risk after stroke.

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10. **Dr. Timal Kannangara** (Supervisors: Drs. Diane Lagace and Jean-Claude Béïque), **University of Ottawa**

Project Title: *Optogenetic activation of newly-generated astrocytes to improve stroke recovery*

Brief Project Description: This project will use optogenetics to increase the electrical activity of new brain cells (astrocytes) to assess if this alters behavioral recovery after stroke in a transgenic mouse model.

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11. **Liam Kelly** (Supervisors: Drs. Michelle Ploughman & Fabien Basset), **Memorial University of Newfoundland**

Project Title: *In chronic stroke survivors, does high-intensity functional exercise training lead to similar improvements in peak aerobic capacity as traditional aerobic exercise training?*

Brief Project Description: This study will assess whether high intensity task-oriented exercise training improves cardiorespiratory fitness in chronic stroke survivors.

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12. **Dr. Hsing-Ching (Cherie) Kuo** (Supervisor: Dr. Adam Kirton), **University of Calgary**

Project Title: *Mapping motor cortex developmental plasticity following perinatal stroke with robotic transcranial magnetic stimulation*

Brief Project Description: This project will use exciting new technologies (robotic transcranial magnetic stimulation) to generate motor maps of brain organization in children with perinatal stroke, before and after an intervention, to better understand how the brain has changed to achieve better function.



13. **Riley Louie** (Supervisor: Dr. Janice Eng), **University of British Columbia**

Project Title: *Use of a robotic exoskeleton to promote walking recovery after stroke*

Brief Project Description: The purpose of this study will be to evaluate the effectiveness of a powered robotic exoskeleton on walking ability in patients early after stroke.

14. **Dr. Matthew McDonald** (Supervisors: Drs. Dale Corbett and Baptiste Lacoste), **University of Ottawa** ***Top ranked application for a post-doctoral fellow & winner of the Martin Rothstein Post-Doctoral Fellowship Award***

Project Title: *Engaging vascular plasticity to promote hindlimb functional recovery in a rat model of ischemic stroke*

Brief Project Description: This study will assess whether the benefits of exercise can be augmented when combined with metformin, an FDA-approved anti-diabetic drug that produces changes in muscles similar to exercise in an animal model.

15. **Fares Ould-Brahim** (Supervisor: Dr. Jing Wang), **Ottawa Hospital Research Institute** ***Top ranked application for a graduate student & winner of the Luc Vanneste Graduate Studentship Award***

Project Title: *Preconditioning of human neural stem cells with metformin to promote post-stroke recovery*

Brief Project Description: This study will investigate whether metformin, an FDA-approved anti-diabetic drug that produces changes in muscles similar to exercise, can enhance neural stem cell survival, proliferation and maturation to promote stroke recovery.

16. **Tijana Simic** (Supervisor: Dr. Elizabeth Rochon), **Toronto Rehabilitation Institute – University Health Network**

Project Title: *Executive control as a predictor of post-stroke aphasia therapy gains and generalization*

Brief Project Description: This project aims to examine whether executive control is an important predictor of how well individuals with post-stroke aphasia recover during and after treatment.



17. **Faryn Starrs** (Supervisor: Dr. Joyce Chen), ***Sunnybrook Research Institute***

Project Title: *Individualized transcranial direct current stimulation for stroke motor recovery*

Brief Project Description: The goal of the current project is to determine whether the amount of brain damage to regions that control movements predicts which type of brain stimulation is more effective in improving arm movements.

18. **Faranak Vahid-Ansari** (Supervisor: Dr. Paul Albert), ***Ottawa Hospital Research Institute***

Project Title: *Optogenetic modulation to enhance recovery from post-stroke depression (PSD)*

Brief Project Description: This project aims to identify the changes in cellular activity associated with post-stroke depression and changes that occur upon successful treatment using optogenetics.

19. **Aaron Yurkewich** (Supervisor: Dr. Alex Mihailidis), ***Toronto Rehabilitation Institute – University Health Network***

Project Title: *The effect of a robotic orthosis in improving the independence and recovery of stroke survivors with hand and wrist disability*

Brief Project Description: In this project, a robotic hand and wrist orthosis will be developed and its usability in providing intensified in-home exercise and assistance in daily activities will be assessed.
