

Fellowship in Brain Medicine

The Brain Medicine fellowship at the University of Toronto will be offered by the Temerty Faculty of Medicine for a 2022 start date. This innovative fellowship has been designed to address an emerging need to approach the study of the brain with an interdisciplinary lens and a collaborative approach. The Brain Medicine fellowship will provide successful trainees with an integrated, cross-disciplinary perspective to approach the clinical and research questions that are related to brain diseases. Examples of conditions that lend themselves to an approach facilitated by Brain Medicine include: traumatic brain injury, neurodegenerative diseases, functional neurological disorders, developmental brain diseases (e.g., autism, attention deficit disorder), vascular brain diseases, multiple sclerosis, schizophrenia, and a variety of other neurologic and psychiatric conditions that are presenting with significant disturbances in affect, behaviour, and cognition.

The University of Toronto offers the ideal environment for such training given the breadth of expertise represented across brain diseases. The successful fellows will have the opportunity to work alongside internationally renowned mentors and gain experience using cutting-edge clinical and research methods and technologies, including advanced neuroimaging, neuro-interventions, neuromodulation, genetics, fluid biomarkers, advanced clinical trials, and preclinical research.

The Brain Medicine fellowship is a competency-based program that aims to provide its fellows with transdisciplinary competencies that complement their postgraduate specialty training; protected time will be provided for academic activities. **Candidates must have completed a residency training program in geriatric medicine, neurology, family medicine, neurosurgery, physical medicine and rehabilitation, psychiatry, or other brain related specialty.**

There are two streams for the Brain Medicine fellowship: a clinical stream and a research stream. There is one position available for the clinical stream and up to three positions available for the research stream.

Clinical Stream

Fellows in the clinical stream of the Brain Medicine fellowship will focus on the assessment and treatment of impaired affect, behaviour, and cognition (ABC) in complex brain disorders. They will also explore the impact of these disorders on functional abilities, quality of life, and interpersonal relationships. The fellow will gain clinical exposure to multiple complementary disciplines including geriatric medicine, neurology, neurosurgery, physical medicine and rehabilitation, or psychiatry. The successful fellow will dedicate most of their time to clinical work (up to 80%) and the rest of their time to academic work (creative professional activity, education, research).

Examples of competencies that the clinical Brain Medicine fellow will acquire include:

- How to perform a neurocognitive/neurobehavioural assessment at an expert level as required for differential diagnosis and problem formulation;
- How to conduct and interpret a complementary and comprehensive neurological and psychiatric examination at an advanced level;
- How to describe the content and psychometric properties of the components of a neuropsychological assessment and integrate these data into clinical evaluations;
- How to interpret and utilize neuroimaging, neurophysiological, sleep, laboratory, and neuropathology studies;
- How to describe the neurobiology of specific brain disorders;
- How to apply relevant treatments such as neuropharmacology, neuromodulation (e.g., rTMS, tDCS, Focused Ultrasound, Deep Brain Stimulation), and psychosocial interventions.



Research Stream

In addition to the one clinical stream fellowship position, there will be up to three Brain Medicine research fellowship positions. In this first cohort of Brain Medicine research fellows (up to 3 fellows), the focus of the research stream will be on the interactions between depression and dementia and will be supported by a collaborative initiative between the Tanz Centre for Research in Neurodegenerative Diseases and the Toronto Dementia Research Alliance (TDRA), and funded by the Temerty Faculty of Medicine. Trainees will develop a research focus under a collaborative mentorship of experts in the field from at least two TDRA sites (i.e., Baycrest, Centre for Addiction and Mental Health (CAMH), Ontario Shores Centre for Mental Health Sciences, Sunnybrook Health Science Centre, and University Health Network) as they work toward becoming independent investigators. The successful fellows will dedicate 20% of their time to clinical work and 80% of their time to research. Fellows will be recruited to focus on preclinical research or on clinical and translational research.

Potential areas of research focus within the area of depression and dementia include:

- Cognitive and sensory information processing
- Drug discovery
- Microglia
- Neuroplasticity
- Imaging
- Neurotechnology (e.g. TMS, tDCS, tACS, DBS, Focused Ultrasound)
- Peripheral biomarkers
- Stress
- Common underlying mechanisms of neurodegenerative disease
- Clinical phenotyping and trials

Selection Process

The Selection Panel is led by the Directors of the Brain Medicine Fellowship (Dr. Sara Mitchell), the Tanz Centre for Research in Neurodegenerative Diseases (Dr. Graham Collingridge), and the Toronto Dementia Research Alliance (Dr. Tarek Rajji), along with the brain medicine steering committee guided by the principles of excellence, equity, diversity and inclusion.

Funding

The successful applicants will receive individualized competitive remuneration package based on qualification and experience, and a generous research stipend if they are in the research stream.

Length of Fellowship

2-3 years for the research stream; 1-2 years for the clinical stream.

Any interested applicants should send an updated CV and a one page statement indicating their interest in Brain Medicine. Applicants applying for the research stream must also include a research statement describing their interest in depression and dementia research. Also, please supply the names and contact information for three referees.

Please send your application to: tdra@utoronto.ca

After an initial review, you may be invited to a virtual interview.



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