

Tatyana Mollayeva, MD, PhD (KITE Research Institute Toronto Rehab University Health Network & Rehabilitation Sciences Institute Temerty Faculty of Medicine & Dalla Lana School of Public Health University of Toronto) has a four-year PhD opportunity for students with Canadian and International status (including students from the United States).

Research description for students interested in applying:

You will work on the development of primary, secondary, and tertiary preventive models of clinical and functional outcomes of complex neurological disorders and injuries. This type of modelling capitalises on current technological developments in data-driven sciences that are revealing the evolution of and the course of neurological disorders and injuries across the human lifespan in unprecedented detail. We aim to use these models to develop theories on the health status transition that link social, environmental, and clinical data across the time continuum. We will test these theories in collaboration with world-leading researchers and academics. You may also develop urgently needed models of how these preventive models are performing across different groups of people.

Your background can be flexible. Training in mathematical modelling and/or scientific programming would be key. We particularly welcome applications from female candidates, candidates from under-represented groups, and those who are the first in their family to go to higher education.

You will form part of the newly-created group led by Tatyana Mollayeva (<https://www.chairs-chaires.gc.ca/chairholders-titulaires/profile-eng.aspx?profileId=5365>) focused on large-scale preventive modeling of neurological disorders and injuries within the Acquired Brain Injury Lab of the Temerty Faculty of Medicine University of Toronto (<https://abiresearch.utoronto.ca/>).

Anyone interested should contact Dr. Tatyana Mollayeva via email: [tatyana.mollayeva@utoronto.ca](mailto:tatyana.mollayeva@utoronto.ca) to discuss potential projects and their application.

Please see the following representative papers:

1. Mollayeva T, Tran A, Chan V, Colantonio A, Sutton M, Escobar MD. Decoding health status transitions of over 200 000 patients with traumatic brain injury from preceding injury to the injury event. *Sci Rep.* 2022 Apr 4;12(1):5584. doi: 10.1038/s41598-022-08782-0. PMID: 35379824; PMCID: PMC8980052.
2. Mollayeva T, Sutton M, Escobar M, Hurst M, Colantonio A. The Impact of a Comorbid Spinal Cord Injury on Cognitive Outcomes of Male and Female Patients with Traumatic Brain Injury. *PM R.* 2021 Jul;13(7):683-694. doi: 10.1002/pmrj.12456. Epub 2020 Sep 21. PMID: 32710463.
3. Mollayeva T, Hurst M, Chan V, Escobar M, Sutton M, Colantonio A. Pre-injury health status and excess mortality in persons with traumatic brain injury: A decade-long historical cohort study. *Prev Med.* 2020 Oct;139:106213. doi: 10.1016/j.ypmed.2020.106213. Epub 2020 Jul 18. PMID: 32693173; PMCID: PMC7494568.

4. Mollayeva T, Hurst M, Escobar M, Colantonio A. Sex-specific incident dementia in patients with central nervous system trauma. *Alzheimers Dement (Amst)*. 2019 Apr 29;11:355-367. doi: 10.1016/j.dadm.2019.03.003. PMID: 31065582; PMCID: PMC6495080.
5. Mollayeva T, Sutton M, Chan V, Colantonio A, Jana S, Escobar M. Data mining to understand health status preceding traumatic brain injury. *Sci Rep*. 2019 Apr 3;9(1):5574. doi: 10.1038/s41598-019-41916-5. PMID: 30944376; PMCID: PMC6447542.