



TEMERTY FACULTY OF MEDICINE
UNIVERSITY OF TORONTO

**Postdoctoral Fellow in Integrative Genomics and Transcriptomics of Sleep and Dementia
Hurwitz Brain Sciences Program at the Sunnybrook Research Institute
Division of Neurology, Department of Medicine
Temerty Faculty of Medicine, University of Toronto**

PI: Andrew Lim, MD
Associate Professor
Neurology
University of Toronto

Description of the Position: The Sunnybrook Research Institute at the University of Toronto is seeking an exceptional postdoctoral fellow to join the Sleep and Brain Health Laboratory (<https://sleepandbrainhealth.ca/>) to deliver a high-quality research program combining high dimensional human brain transcriptomic and genomic data with new ambulatory sensor-based measures of human physiology to investigate the impact of sleep and circadian disruption on Alzheimer's disease and related dementias.

The fellow will play a key role in two NIH and CIHR-funded projects. The fellow be responsible for analyzing existing (n=1080) and to-be-generated (n=500) human brain bulk RNA-seq and single nucleus RNA-seq data from older adults, and relating this to measures of circadian rhythmicity and sleep derived from ambulatory sensor data, to identify genetic and cellular correlates of sleep and circadian rhythm disruption, and their relationship to dementia. The fellow will also analyze existing genomic data from >1000 older adults, and newly generated genomic data from >3000 middle-aged Ontarians with brain imaging and ambulatory sensor-based measures of sleep physiology, and use Mendelian randomization approaches to combine this with existing GWAS and eQTL data to infer causal links between sleep and circadian rhythm disruption and dementia-associated brain changes. There will be opportunities for multiple publications at the interface of sleep, circadian rhythms, genomics/transcriptomics, and dementia.

The fellow will work directly with PI Dr. Andrew Lim; internal and external collaborators in human genomics, drosophila sleep and genomics, and neuroimaging; and graduate students and others in the lab to achieve these goals. The fellow will be interested in developing research questions and optimizing analysis streams tailored to the study aims. New approaches and ideas are encouraged, as are independent projects that dovetail with current studies.

Applicants with expertise in genomics, bioinformatics, informatics, statistics, mathematics, computer science, or computational biology are particularly welcome. Training in clinical research, in sleep and circadian biology, in the analysis of human ambulatory sensor data, and in the analysis of human genomic and transcriptomic data will be provided.

This is a fully funded position. Salary is commensurate with experience and with CIHR/NIH stipend levels.

Required Qualifications:

- PhD in received within the last 5 years or graduating PhD candidate in genetics, bioinformatics, statistics, epidemiology, computer science, computational biology, or a related quantitative field
- Strong research record
- Strong programming skills in R / Bioconductor, Python, or MATLAB.
- Ability to communicate complex information clearly, orally and in writing
- Previous experience in analysis of RNA-sequencing, genetic or other -omic data is mandatory;

- Ability and willingness to work in a dynamic interdisciplinary team environment

Preferred Experience and Skills

- Experience with Mendelian randomization
- Experience with single nucleus RNA-seq data
- Knowledge of sleep and dementia
- Knowledge of basic neurobiology

Application

To apply for this position, please:

- a) Send a) a cover letter b) Curriculum Vitae c) a writing sample (e.g. manuscript) d) statement of postdoc and career goals, and e) the names and contact information for three potential references to:

Mr. Andrew Centen
Sleep and Brain Health Laboratory
Sunnybrook Research Institute
2075 Bayview Avenue, room M1-600 Toronto, ON,
M4N 3M5 ontariosleephealthstudy@sunnybrook.ca

Links

- Sunnybrook Sleep and Brain Health Laboratory: <https://sleepandbrainhealth.ca/>
- Sunnybrook Research Institute: www.sunnybrook.ca/research
- University of Toronto: www.utoronto.ca

Sunnybrook Research Institute (SRI) is a research and teaching institute and is the research arm of the Sunnybrook Health Sciences Centre (SHSC), and is fully affiliated with the University of Toronto. SRI has around 1000 research staff, including more than 300 scientists and clinician scientists. Sunnybrook Research Institute provides a dynamic research environment for postdoctoral fellows and research scientists by linking education and training with research. There are over 60 Canadian and international postdoctoral fellows, over 190 Canadian and international graduate students, and over 475 other research staff working hands-on with research projects.

Applications are encouraged from qualified women and men, members of visible minorities, aboriginal peoples and persons with disabilities. In accordance with Canadian immigration requirements, this advertisement is directed initially to Canadian citizens and permanent residents. We thank you in advance for your interest. Only those candidates selected for an interview will be contacted. No phone calls please. Application screening will continue until a suitable candidate is identified.