



Faculté de  
médecine



**Villeneuve Lab**  
Imagerie multimodale du vieillissement cérébral  
Multimodal Imaging of the Aging Brain



**One funded Postdoctoral position at McGill University  
In multimodal neuroimaging in preclinical Alzheimer's disease**

[www.villeneuelab.com](http://www.villeneuelab.com)

**McGill University**, Montreal, Canada, is a leading institution in the fields of neuroimaging and artificial intelligence, with a specific strength in studying aging. The MNI is the largest training center for brain research in Canada, housing over 120 investigators studying the full spectrum of the brain, from cellular and molecular biology to brain imaging and cognitive neuroscience. The McConnell Brain Imaging Centre (BIC), located at the Montreal Neurological Institute (MNI), is one of the world largest neuroimaging centers and one of the seven centers worldwide using a high resolution PET scanner. The Brain Imaging Centre (BIC), located at the Douglas Mental Health Institute is a new state-of-the-art facility dedicated to conducting preclinical and clinical brain imaging research in the field of mental health.

**The Villeneuve lab** combines cutting-edge neuroimaging, genetics and behavioral methods to better understand the similarities and differences between biological aging and Alzheimer's disease (AD)-related brain changes. The Villeneuve lab innovates research in three main axes: 1) early amyloid and tau deposition and propagation, 2) interplay between AD pathology and vascular pathology and, 3) gene environment interactions that influence AD pathology and clinical expression. Studies are primarily conducted on the PREVENT-AD dataset, but also involved the ADNI, WRAP, ACS, HCP and DIAN datasets. The PREVENT-AD cohort is a large dataset of ~350 cognitively normal older adults (mean age at enrolment  $64.5 \pm 5.5$  years) with a family history of AD dementia. Longitudinal assessments include brain structural (T1 image, DWI and FLAIR MRI) and functional (ASL, resting state and task fMRI) measures, cognitive testing, and general health assessments. Genetic, medical and lifestyle assessments are available for most participants. Fluid (CSF and plasma) amyloid and tau biomarkers are available for 2/3 of the cohort and PET amyloid and tau scans are available for 1/3 of the cohort.

**One postdoctoral position is available** for a highly motivated researcher in the field of neuroimaging, bioinformatics, computer sciences or related fields with a strong interest in better understanding the aging brain. The position will involve amyloid and tau PET imaging, MRI imaging and other biomarkers such as fluid biomarker (CSF and plasma), cognition and genetics. The candidate should have coding skills using R, python, Matlab or other languages. Ideal candidate would have an expertise in multimodal neuroimaging, statistics and machine learning.

**The position** duration is one year, renewable contingent upon performance. The starting date is flexible, but the applicants should be within one year (before or after) of her/his PhD diploma. The applicant will be encouraged to apply for research funding. The position will offer several avenues to build international collaborations with the world leaders in the field of PET imaging and AD.

**To apply** please submit a cover letter, curriculum vitae, and a short statement of research interests to Dr. Sylvia Villeneuve at [sylvia.villeneuve@mcgill.ca](mailto:sylvia.villeneuve@mcgill.ca). Letters of recommendation will be requested following a Skype interview. Review of applications will begin immediately and continue until the positions are filled.