

## AUSZ\_EUCan \ \ FROM AUTISM TO SCHIZOPHRENIA : STUDY OF THE GENETIC MECHANISMS. UNDERLYING BRAIN DYSFUNCTION AND STRUCTURAL PHENOTYPES IN SCHIZOPHRENIA AND AUTISTIC SPECTRUM DISORDERS

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### SUCCESSFUL PROJECTS

Schizophrenia (SCZ) and autistic spectrum disorders (ASD), two severe disorders, share symptomatology and neurocognitive conditions. Distributed structural brain abnormalities are described in both disorders, involving cortical and sub-cortical anomalies, suggesting that they could reflect 'dysconnectivity' within cortical networks. We propose an integrative approach combining comprehensive cognitive assessments, high-resolution genetics and brain imaging with a translational approach in mouse models.

Our objectives are: i) to compare developmental clinical features, brain anatomy and neurocognitive functions in a large sample of patients with early- and adult-onset SCZ or ASD and their respective relatives and controls; ii) to study the variant of genes involved in brain development in relation to brain structural variations, white matter architecture, myelination, connectivity, cortex morphology and gyrification as well as rare genetic variations in genome wide scans for Copy Number Variations and de novo mutations; iii) to study novel animal models with developmental abnormalities of the subcortical white matter. This project, which involves 5 partners in Europe and Quebec, will improve the identification of the biological basis of ASD and schizophrenia and will, in turn, improve therapeutic interventions in mental and cognitive disorders.



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