Postdoctoral position in biostatistics

Joint modeling of disease and endophenotype to characterize the effect of genes and their interactions

Supervisor: Professor Alexandre Bureau at the Laboratory of Biostatistics and Psychiatric Genetics at the Centre de recherche Université Laval – Robert-Giffard (CRULRG).

Project description: To overcome phenotypic complexity in genetic studies of psychiatric disorders, a widespread approach is to measure endophenotypes, traits related to a disease and believed to be influenced by fewer genes. The presence of impairments on an endophenotype in both affected and non-affected relatives can provide information on familial transmission of alleles of genes involved in epistatic interactions causing the disease. This project aims at fulfilling the need for methods exploiting this information by jointly modeling a disease and its endophenotypes in relation to genes and their interactions. The trainee will need to extend existing statistical models for genetic association studies of dichotomous and/or quantitative traits in families and develop computer programs to implement the models. The statistical behaviour of the proposed test statistics and parameter estimates will be evaluated in simulation studies and their power compared to that of alternative approaches. The proposed methods will also be evaluated in an ongoing study of cognitive endophenotypes in a sample of 48 extended kindreds densely affected by schizophrenia and bipolar disorder, and to publicly available datasets for other disorders. The research project can be conducted in English, but the candidate is expected to acquire a working knowledge of the French language.

Requirements:
- Ph.D. degree or equivalent in biostatistics, statistics, mathematics or related field.
- Good programming skills. Knowledge of the R statistical language an asset.
- Availability to begin position between January and October 2011.

Financial support: $40,000 - $45,000 for one year, renewable for a second year.

To apply, please send a CV, copy of publications and a cover letter to:

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