

PROJECT DETAILS

Project Title:

Improving genomic prediction of Alzheimer's disease onset and progression

Project Summary:

Alzheimer's disease (AD), the leading cause of dementia worldwide, is a complex disease with many underlying genetic and environmental risk factors, resulting in inter-individual variation in presentation and trajectory. This project will utilise statistical and machine-learning approaches to construct genetic risk scores for improved genomic prediction of AD onset and progression. Further, it will explore whether modifiable lifestyle factors (e.g., physical activity, sleep) can mitigate genetic risk of AD, and identify the stages along the disease trajectory where this effect is greatest. This study will help to identify individuals likely to benefit from early pharmacological or non-pharmacological (i.e., lifestyle) interventions, which may delay or prevent disease onset.

Preferred Applicant Skillset:

We are looking for applicants with a high level of achievement, including an Honours or Masters by Research degree. Alternatively, a Masters by Coursework in a highly desired area (e.g. bioinformatics, data science, statistical genetics) with demonstrable research experience (e.g. research publications). The ideal candidate will have experience in statistical analysis and genetics, excellent organisational and communication skills, and a strong understanding of research methods. Well-developed skills in the use of R statistical software and previous experience in the use of software for analysis of genetic data and construction of genetic risk scores (e.g. PLINK, PRSice) are highly desirable.

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