



Dr Celia M.T. Greenwood PhD



Dr Greenwood is the **Scientific Director** of the Genomics, Bioinformatics & Statistical Genetics axis of McGill's [Ludmer Centre for Neuroinformatics & Mental Health](#) and a **Senior Scientist** in the Centre for Clinical Epidemiology at the Jewish General Hospital's Lady Davis Institute. At McGill University, she is a **Professor** in the departments of Oncology, Human Genetics, and Epidemiology; Biostatistics & Occupational Health; and the Division of Cancer Epidemiology in the Faculty of Medicine. She is also the inaugural **Graduate Program Director** of McGill's new interdisciplinary **Quantitative Life Sciences (QLS) PhD program** for the faculties of Medicine and Science.

Dr Greenwood is a quantitative-life-sciences statistician, part of a new group of multi-qualified researchers advancing the application of mathematical, computational and other quantitative methods to study biological systems on multiple levels — from single molecules to environmental influences on the genome (i.e., epigenetics). Her research has made significant contributions to the fields of statistical genetics, genomics, epigenetic and genetic-epidemiology while **advancing our understanding of cancers, mental illnesses and brain disorders**. As part of her research, Dr Greenwood develops statistical methods and complex algorithms that enable researchers to integrate and manipulate diverse datasets. These tools condense complex, highly specific analysis that often takes researchers years to master into ready-to-use software applications (apps) that are improving the statistical accuracy of research findings across multiple research domains.

Highly respected internationally, Dr Greenwood co-led the [UK10K](#) statistical team (2010-14) that studied the genetic code of 10,000 people to investigate how rare, low-frequency genetic variants contribute to human disease. Highly cited, the study established a crucial data resource for future research in human genetics. In 2015, she became an Associate Editor for *Frontiers in Statistical Genetics and Methodology* and was elected to the board of directors of the newly established **International Genetic Epidemiology Society** and is now its President (2018-20). Dr Greenwood is currently partnered with researchers across the European Union, Asia and North America to advance research in cancer, mental illnesses and brain diseases, including five longitudinal cohort studies. Testament to the growing relevance of Dr Greenwood's cross-disciplinary research, she has a Google Scholar H-index of 44; citations of her research rose 24% in 2016 and now number over ten thousand.

Dr Greenwood's current work involves the development and application of a wide range of statistical approaches aimed at improving our understanding of how genomic and environmental factors influence disease risks and progression. Her work is an integral part of the Genetic Epidemiology group at the Lady Davis Institute and the **Segal Cancer Centre**, where she is supported by the Weekend to End Women's Cancers. Within the Ludmer Centre, Dr Greenwood's team is the **lynchpin to extracting meaningful results and new insights** from the centre's neuroinformatics platform and the growing mass of high-quality multivariate datasets. This work has culminated in the creation of a number of algorithms and analytical software programs advancing vital research across multiple domains.

Recognising that some of the most challenging problems in biology and medicine could not be solved without a highly interdisciplinary approach, Dr Greenwood continues to provide McGill-wide leadership in the training of new transdisciplinary researchers. She is a key driver in developing transdisciplinary capacities among trainees and post-doctoral fellows across the Ludmer Centre's multi-disciplinary research teams and via the QLS program.

Dr Greenwood obtained a B.Sc. (1985) in Mathematics at McGill, a Master of Mathematics in Statistics (1987) at the University of Waterloo, and a PhD in Biostatistics (1998) at the University of Toronto.