Personal Genome Project Canada launches

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The Personal Genome Project Canada (PGP-C) launches this week giving Canadians an unprecedented opportunity to participate in a groundbreaking research study about human genetics and health.

A collaborative academic research effort with Harvard Medical School's Personal Genome Project (PGP-HMS), PGP-C aims to sequence the genomes of 100 Canadians over the next year. Combined, the projects will sequence 100,000 individuals over 10 years and the genetic information collected will be deposited into a public repository that researchers from around the world can use as control data. Founded in 2005, PGP-HMS currently has more than 2,100 enrolled volunteers with publicly available genetic and health information, including more than 100 whole genomes.

The sequenced genomes will serve as a valuable resource to researchers searching for the genetic basis for diseases, including cancer and autism, as well as scientists working on computer software to better analyze human genome sequence information.

"It is estimated that we will need to decode 100,000 genomes worldwide to begin to make sense of those genetic variants that are involved in disease and those which protect us from it," says Dr. Stephen Scherer, Director of the University of Toronto's McLaughlin Centre and The Centre for Applied Genomics at The Hospital for Sick Children.

Dr. Scherer's group is actively involved in research studying the genomes of individuals with disorders like autism. His team also hosts the

Database of Genomic Variants, a resource that supports diagnostic laboratories worldwide in their interpretation of clinical genetic data.

"Genome sequencing is entering mainstream medicine and we need to know from the Canadian perspective how to deal with the data from all aspects of the technology, information sciences, privacy and health economic impact," says Scherer.

Through a partnership with Life Technologies, PGP-C recently used the Ion Proton™ System to complete the whole genome sequence of the first research participant, Jill Davies or "PGPC-1," and aims to incrementally grow the number of individuals with genome sequences over time. Davies is a genetic counselor at Toronto's Medcan Clinic, Canada's largest private clinic. The Clinic is supporting Scherer's research team to enable the collection of participants and to help determine the clinical significance of the data. Each genome encodes six billion genetic letters, which now takes about a week to sequence and twice that time to generate a rudimentary description of its contents. PGP-C will accelerate the process of understanding how to fully decode this information.

The dramatic decline in the cost of whole genome sequencing now makes it possible for large numbers of Canadians to have their genomes analyzed.

"Run out of the University of Toronto's McLaughlin Centre, the project will educate medical students, physicians, and health care workers and help them understand and apply the new genomic data to benefit patients and families," says Dr. Catharine Whiteside, Dean of the Faculty of Medicine at the University of Toronto.

More information: Volunteers who are interested in sharing their genetic and self-reported health information should visit:

www.personalgenomes.ca

Provided by University of Toronto