



McGill

— VICTOR PHILLIP DAHDALEH —
INSTITUTE OF GENOMIC MEDICINE
AT MCGILL UNIVERSITY



McGill Applied Genomics Innovation Core (MAGIC)

Partners for Advancing Genomics Research



Cores and Supported Applications

CORES	ACTIVITY	TECHNOLOGY / ACTIVITY
Production Genomics	Whole Genome Sequencing Exome / Targeted Capture Sequencing Whole Genome Bisulfite Sequencing (WGBS) RNA-Seq / miRNA-Seq ChIP-Seq, ChIPmentation, ATAC-Seq Expression Arrays / Genotyping	Illumina NovaSeq Illumina NovaSeq Illumina NovaSeq Illumina NovaSeq Illumina NovaSeq Illumina iScan / Affymetrix GeneTitan
Advanced Genomics Technologies	10X Genomics Single-cell applications Long-reads sequencing SmartSeq2 Single-cell RNAseq Protein expression Hi-C	10X Genomics / Illumina NovaSeq / Complete Genomics Oxford Nanopore / PacBio Illumina NovaSeq 10X Genomics Visium Illumina NovaSeq
Biomarker	Spatial genomics Immunoassay-based detection of biomarkers High-throughput aptamer-based proteomics LC/MS (Liquid Chromatograph-Mass Spectrometry) GC/MS (Gas Chromatograph-Mass Spectrometry)	Nanostring GeoMx Olink Proteomics SomaLogic Shimadzu Shimadzu
Microbial Genomics	Amplicon sequencing and metagenomics	Illumina MiSeq
Canadian Centre for Computational Genomics	Bioinformatics support	Technology Development and Analysis

Platform Support

Full project support by specialized teams:

- Project scoping and custom advice
- Competitive costing
- Fast turn around times
- Client project submission portal: hercules.genome.mcgill.ca
- Deliverables = raw data (Fastqs) or aligned reads
- Bioinformatics support: C3G (Canadian Centre for Computational Genomics)



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Contact us: pm.genome@mcgill.ca

Projects and Initiatives

Examples of major projects



National COVID sequencing project through CGEN, with >4600 sequenced genomes



Collaboration with INSPQ to sequence >110K COVID samples



Sequence thousands of tumor and normal samples in the next 5 years, with 1200 patients DNA and RNA sequenced to date.



FITNESS: Forward-In-Time Natural Experimental Study of Selection with 11,000 fish genomes sequenced

Research Driven Support

- “Full support”: from DNA extractions to data analysis
- 600+ research projects supported in 2023: Canadian and international projects
- Research activities including:
 - Infectious disease (e.g., HostSeq)
 - Neuroscience (e.g., EpiBrain, Neuro Genomics Partnership)
 - Aging (e.g., partner for the Canadian Longitudinal Study for Aging)
 - Cancer (e.g., partner for the Terry Fox Marathon of Hope)
 - Molecular Ecology
 - Among others ...

