

**2012 Large-Scale Applied Research Project Competition in  
Genomics and Personalized Health  
Successful Pre-Applications**

Lead Genome Centre	Co-Lead Genome	Project Leader		Co-Project Leader		Lead Organization	Title of Project	Keywords	
		Last Name	First Name	Last Name	First Name			Research Areas	Methodologies and Technologies
Genome British Columbia		Connors	Joseph	Marra, Gascoyne	Marco, Randy	BC Cancer Agency	Personalized Treatment of Lymphoid Cancer: British Columbia as Model Province	Lymphoma; health economics; genomics; sequencing; oncogenes	Genomics; informatics; health economics; personalized health care
Genome British Columbia		Friedman	J.M.			UBC	Is whole genome sequencing the ultimate clinical test for genetic forms of intellectual disability?	Intellectual disability, genetic testing, genetic counselling	Whole genome sequencing
Genome British Columbia		Goldowitz	Daniel	Connolly	Mary	UBC	Pediatric Epilepsy: From Genetics to Patient Care	Pediatric epilepsies, Genetics, Pharmacogenomics, Quality of life, Knowledge translation.	Whole genome sequencing, database repository, SNP analysis, phenotyping, chip-based diagnostics
Genome British Columbia		Harrigan	Richard	Montaner	Julio	BC Centre for Excellence in HIV/AIDS, St. Paul's Hospital	Viral and Human Genetic Predictors of Response to HIV Therapies	HIV; Resistance; Pharmacogenetics Therapy	Next generation sequencing; HIV phenotyping
Genome British Columbia	Genome QC, Ontario Genomics Institute	Lewis	Suzanne	Rouleau, Liang	Guy, Ping	UBC	Causal Developmental Pathways to Optimal Treatment Outcomes for Autism Spectrum Disorders	Autism spectrum disorders (ASDs); phenome-genome diagnostic algorithms; early diagnosis and treatment; pathogenetic mechanisms and developmental pathways; autism health & function decision making tools.	Next generation sequencing; phenomic cluster analyses; quantitative trait loci; bioinformatics; biostatistics; natural history and outcome surveillance.
Genome British Columbia	Genome Alberta	Penn	Andrew	Borchers, Coutts	Christoph, Shelagh	Victoria General Hospital	Reducing stroke burden with hospital-ready biomarker test for rapid TIA triage	Proteomics, TIA (Transient Ischemic Attack) Biomarkers, Bioinformatics, Epidemiology, Secondary Stroke Prevention	MRM Mass spectrometry with SIS peptides, Cross-sectional Validation Study, Clinical Utility Study, Clinical-Biomarker Clinical Decision-Support App, Usability Engineering.
Genome British Columbia		Sin	Don	Ng	Raymond	St. Paul's Hospital, UBC, PROOF Centre for Excellence	Clinical Implementation and Outcomes Evaluation of Blood-based Biomarkers for COPD Management	Chronic obstructive pulmonary disease (COPD); biomarkers; health economics; health outcomes, acute exacerbations	Biomarkers, genomics, proteomics, diagnostics, health technology assessment
Genome British Columbia		Tai	Isabella			UBC	Novel Biomarkers and Therapeutics for Personalized Management of Colorectal Cancer	Colorectal Cancer, Cancer Progression	Prognostic and Predictive Markers
Genome Alberta		McCabe	Christopher	Bubela	Tania	University of Alberta	PACE - 'Omics: Personalized, Accessible, Cost-Effective applications of 'Omics technologies	Evidence-based cost-effective personalized healthcare: Health technology assessment; resource allocation modeling; socio-economic, legal and ethical issues in the clinical translation of 'omics research; governance and regulation of innovation and technology	Economic modeling; health technology assessment; comparative case study analysis; public preference elicitation; Bibliometrics; Patent landscaping
Ontario Genomics Institute		Boycott	Kym	MacKenzie	Alex	University of Ottawa	Enhanced CARE for RARE Genetic Diseases in Canada	rare diseases, gene identification, molecular diagnostics, rare disease treatment, health economics	clinical characterization, next-generation sequencing, pharmacologic modulation, antisense oligonucleotides
Ontario Genomics Institute		Bremner	Rod	Khokha	Rama	Ontario Cancer Institute	Prevention of Heritable Cancer	Prevention, Heritable cancer, Multiple cancer syndromes.	Preclinical models, NextGen diagnostics and genomic signatures, personalized cancer prevention clinical trial design, GE3Ls evaluation of societal preferences, health services delivery and cost-impact evaluation.
Ontario Genomics Institute		Keshavjee	Shaf	Liu	Ming-Yao	University of Toronto	Personalized medicine for lung transplantation: rapid molecular diagnosis with biomarkers from genomic studies.	Lung Transplantation, Organ Assessment-Repair, Personalized Medicine	Microarray, Metabolomics, Proteomics, Bioinformatics

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Ontario Genomics Institute		Kim	Richard	Hegele	Robert	Lawson Health Research Institute	Prevention of adverse drug reactions through integration of pharmacogenomics and drug interactions	Personalized Medicine, adverse drug reactions, pharmacogenomics, drug metabolism, drug interactions	Pharmacogenomics, Pharmacometabolomics, health economics
Ontario Genomics Institute		Krahn	Murray	Miller	Fiona	University of Toronto	Centre for the Evaluation of Genomic Technologies	Health technology assessment Sustainable innovation	Economic evaluation Health policy Bioethics
Ontario Genomics Institute		Liu	Peter	Keller	Gordon	University of Toronto	Cardiovascular Biomarker Discovery and Translation (CBDT Team)	Biomarkers, Cardiovascular, Proteomic, Heart Failure, Atrial Fibrillation	Comprehensive Proteomics, Stem Cell Differentiated Myocyte Platform, N-GlycoProteome, Bioinformatic Analysis, Human Tissue Discovery & Validation, Patient Cohort Staged Validation, Personalized Therapeutic Evaluation and Cost-Effective ModelingTherapeutic Evaluation and Cost-Effective Modeling
Ontario Genomics Institute		Mak	Tak	Ohashi	Pam	University Health Network	Identification of predictive markers of immune modulators in anti-cancer immunotherapy.	Immunotherapeutics, immunobiomarkers, cancer treatment, personalized tumor immunotherapy, treatment of inflammatory disorders	siRNA screens; synthetic antibodies; mouse models of inflammation, cancer, and anti-cancer immunotherapy
Ontario Genomics Institute		McPherson	John	Siu	Lillian	Ontario Institute for Cancer Research	CGAT: Cancer Genomics Applications to Translation	Clinical benefit of large-scale DNA sequencing, Implementation of NGS in a CAP/CLIA environment, Targeted therapies, Optimization of assignment to standard agents or to clinical trials based on molecular profiling information, Socio-economic benefit of clinical genomics	Next-generation sequencing, Clinical genomics, Decision tree database development Clinical genomics, Decision tree database development
Ontario Genomics Institute		McPherson	Ruth	Dent	Robert	University of Ottawa Heart Institute	An integrated genetic, metabolic and clinical approach to individualized obesity management	obesity, genetics, genomics, micro RNA, bioinformatics, personalized medicine	exome sequencing, genome wide genotyping, whole genome expression analysis, miRNA profiling, mitochondrial function, metabolomics, bioinformatics, network analysis, psychosocial integration of genomics in healthcare delivery, health economics
Ontario Genomics Institute		Pawson	Tony	Rottapel	Robert	Mount Sinai Hospital	Personalized signalling signatures to guide therapy in cancer.	Signal Transduction, Patient Stratification, Ovarian Cancer, Laboratory-Developed Test, Tumour Remodeling	Quantitative Mass Spectrometry, Kinase Enrichment, Immunoprecipitation, Clinical Assessment, Health Technology Assessment
Ontario Genomics Institute		Roberts	Robert	Stewart	Alexandre	University of Ottawa Heart Institute	Functional analysis and validation of novel genetic risk factors and interferon alpha-21 to predict coronary artery disease in two large prospective longitudinal studies	Genetics, Coronary artery disease, Interferon alpha-21, Heritability, Health Economics.	RNA-Seq and DNA sequencing, Genotyping and ELISA assay, Exome chip project-an array containing 250,000 rare SNPs selected from exons throughout the genome (Exome), Prospective longitudinal follow-up studies, Monte Carlo Micro-simulation modeling for health economics analysis
Ontario Genomics Institute		Scherer	Stephen	Szatmari	Peter	The Hospital for Sick Children	Autism Spectrum Disorders: Genome to Outcomes	Autism gene discovery, Personalized genetic diagnostics and health services, Prevention and Treatment, Dissemination and Policy	Genome sequencing, Genome informatics, Genomic surveillance, Genetic counseling, Health economic impact

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Ontario Genomics Institute		Stein	Lincoln	Godfrey	Tony	Ontario Institute for Cancer Research	Early detection of patients at high risk of esophageal adenocarcinoma	esophageal cancer, barrett's metaplasia, early diagnosis, health services research, genetic biomarkers	genomics bioinformatics
Ontario Genomics Institute		Stewart	David	Rudnicki	Michael	Ottawa Hospital Research Institute	Optimizing patient care by predicting failure of taxane/platinum therapy for non-small cell lung cancer	Personalized medicine, Non-small cell lung cancer, resistance predictors, taxane-platinum combination, pharmacoeconomics	RNA sequencing, bioinformatics
Ontario Genomics Institute		Stintzi	Alain	Mack	Dave	University of Ottawa	The Microbiota at the Intestinal Mucosa-Immune Interface: A gateway for personalized health	children health, inflammatory bowel disease, diabetes, gut microbiota, and biomarkers.	metagenomic, metaproteomic, next-generation sequencing, and systems biology
Ontario Genomics Institute		Wrana	Jeff	Zlotta	Alexandre	Mount Sinai Hospital	Development of a Cancer Management Ecosystem in Bladder Cancer	Bladder Cancer	Next generation RNA-Sequencing, FFPE clinical samples, low abundance tissue samples, integrative functional genomics, network biology
Ontario Genomics Institute	Genome Prairie	Yeung	Rae	Rosenberg	Alan	The Hospital for Sick Children	Precision Medicine in Childhood Arthritis	Molecular Medicine, Biomarkers, Disease Taxonomy, Childhood Arthritis, Health Economics	Genomics, Transcriptomics, Proteomics, Metabolomics, Immunomics; Bioinformatics, Computational Biology and Machine Learning; Functional Genomics and Systems Biology; Cost-effectiveness Analysis; Health Technology Assessment
Génome Québec		Bergeron	Michel	Loo	Vivian	Université Laval	A Translational Genomic Approach to Diagnose and Control Clostridium difficile Infections	Personalized healthcare, Personalized molecular diagnostics, C. difficile infection (CDI) and C. difficile carriers(CD carriers), Epidemiology, prevention and control of hospital-acquired infection (HAI), Intestinal microbiota/microbiome. Metagenomic and virulence markers of CDI	Metagenomics, bioinformatics, molecular diagnostic technologies, high throughput sequencing, socio-economic impact analysis
Génome Québec	Ontario Genomics Institute	Cossette	Patrick	Minassian	Berge	Université de Montréal	Personalized medicine in the treatment of epilepsy	epilepsy, intellectual disability, anti-epileptic drug, biomarker, drug target	next generation sequencing, whole genome analysis, drug response, personalized healthcare
Génome Québec		Jabado	Nada	Majewski	Jacek	McGill University	The ICHANGE (International CHildhood Astrocytomas iNtegrated Genomics and Epigenomics) Consortium	Pediatric oncology, Glioblastoma, biomarkers, histone 3, epigenome & transcriptome	Whole genome bisulfite sequencing, next generation sequencing, bioinformatics, RNA seq, proteomics, cell culture, mouse models
Génome Québec		Perreault	Claude	Roy	Denis-Claude	Université de Montréal	Personalized Cancer Immunotherapy	Hematological cancers immunotherapy, T-Cell biology, immunogenetics, cellular therapy, clinical trials	Proteomics, mass spectrometry. Transcriptome sequencing, cGMP cell manipulation, flow cytometry
Génome Québec		Richards	Brent	Lathrop	Mark	McGill University	RE3: Re-Positioning, Re-Sequencing and Re-Assigning for Accelerated Drug Development	Drug repositioning, Personalization, Pharmacogenetic clinical trials, pharmaco-economics and intellectual property of repositioned drugs	sequencing, Allelic expression, pharmacogenetic trials, animal and rare variant-based cell models
Génome Québec		Rioux	John D.	Bitton	Alain	Université de Montréal	IBD Genomic Medicine Consortium (iGenoMed): translating genetic discoveries into a personalized approach to treating the inflammatory bowel diseases	Inflammatory bowel disease; function-based stratification; predictive test for treatment selection; budget impact analysis; IBD treatment guidelines	Next generation sequencing; high-content functional screens; bioinformatics; physician/patient surveys; knowledge transfer
Génome Québec	Genome British Columbia	Rousseau	François	Langlois	Sylvie	Université Laval	PEGASUS: PErsonalized Genomics for prenatal Aneuploidy Screening USing maternal blood	Real-world comparative effectiveness, GE3LS, Evidence based laboratory medicine, Non-invasive prenatal testing, Health services research	Massively parallel sequencing, Circulating cell-free (fetal) DNA analysis, Economic modeling, GELS, Implementation research

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Génome Québec		Sauvageau	Guy	Hébert	Josée	Université de Montréal	Innovative chemogenomic tools to improve outcome in acute myeloid leukemia	Leukemia, chemogenomics, GPCR, monoclonal antibodies, personalized medicine	Next-generation sequencing, bioinformatics, chemical screen, flow cytometry, xenotransplantation
Génome Québec		Simard	Jacques	Knoppers	Bartha-Maria	Université Laval	Personalised Risk Stratification for Prevention and Early Detection of Breast Cancer	Genetic architecture of breast cancer susceptibility, risk prediction model, genomic profiling, prevention and risk reduction strategies, health-promotion campaign, evidence-based knowledge transfer tools, best practices for equitable breast cancer risk assessment and risk communication, socio-economic evaluation of the impact of personalised risk stratification for breast cancer prevention and early detection, measure the effect of improved breast cancer risk information on health professional and women's decisions to use personalised health services	High-throughput genotyping, massively parallel sequencing, genetic risk prediction model, cascade genetic testing, biostatistics and bioinformatics, survey, experimental economics laboratory, information technology, population healthy and health economics micro-simulation modeling
Génome Québec		Tardif	Jean-Claude	Dubé	Marie-Pierre	Université de Montréal	Personalized medicine strategies for molecular diagnostics and targeted therapeutics of cardiovascular diseases	Cardiovascular pharmacogenomics, personalization of drug treatment, companion diagnostics, implementation of pharmacogenomic tests, improved guidelines in clinical practice	Next-generation sequencing, lipidomics, biostatistics, pharmacoeconomic modelling, commercialization strategies