

John R. Evans Leaders Fund Backgrounder

Quebec

The Canada Foundation for Innovation (CFI) Board of Directors approved a contribution of \$24,655,800 to support 109 infrastructure projects in the province.

| Project Title | Maximum CFI Contribution |
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Bishop's University

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| * Impact d'une intervention axée l'éco-anxiété sur le bien-être d'élèves du primaire | \$11,143 |
| 1 project | \$11,143 |

* Funding for Research Infrastructure Associated with SSHRC Research Support

Concordia University

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| Scalable Deep Learning Models and Training Methods on Next Generation Hardware Graphcore IPU | \$189,494 |
| Closed-loop Brain Stimulation using Optically-pumped Magnetoencephalography: A New Frontier | \$106,008 |
| Advanced Materials Characterization Tools for Next Generation Adsorbents | \$240,780 |
| Face Masks- Next Generation of Wearable Biosensors to Move Canada Towards a Healthier Future | \$132,968 |
| High-speed Electric Powertrain Component Test System towards Transportation Electrification | \$171,632 |
| Long-term Multiscale Fish Tracking Networks for James Bay and Eastern Saint Lawrence River | \$214,133 |
| Photoelectron Spectrometer for Unlocking the Electronic Properties of Organic Semiconductors and Nanomaterials | \$247,199 |
| Mapping the White Matter Connectional Architecture of the Brain | \$108,816 |
| Tribological Coatings and Lubrication Strategies for Extreme Environments: Experimental and Computational Approach | \$180,110 |
| Infrastructure for IoT Security Lab | \$99,612 |
| Real-time Chemical Analysis for CO2 Conversion and Grid Storage Batteries | \$200,000 |
| * Indigenous Futures Research Centre | \$180,000 |
| 12 projects | \$2,070,752 |

* Funding for Research Infrastructure Associated with SSHRC Research Support

McGill University

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| Towards a Safer, Less Invasive, and more Effective Mapping of Drug-resistant Epilepsy Networks | \$467,119 |
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INNOVATION

Canada Foundation for Innovation Fondation canadienne pour l'innovation

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| Centre for Study and Treatment of Circadian Rhythms | \$225,630 |
| Elucidating the Structure and Assembly of Biologically-derived Materials via Spectroscopic and Imaging Techniques | \$719,441 |
| Political Landscape Archaeology Laboratory | \$105,921 |
| Infrastructure for Harnessing Bone and Periodontal Stem Cell Regenerative Potential | \$546,130 |
| Harnessing the Optical Properties of Natural and Engineered Systems for Environmental Pathogen Control | \$126,505 |
| Advanced Bioimaging Tools to Study Neuronal Disease and Cancer Metastasis | \$796,174 |
| Physiologic- and Pathophysiologic-responsive Brainstem Neurons Regulating Appetite | \$88,955 |
| Empirical Evaluation of Intelligent Soft Robots | \$200,000 |
| Accurate Characterization and Prediction of Hydrogen Embrittlement for a Reliable Pathway Towards Hydrogen Economy | \$525,000 |
| Experimental Characterization of Pathogen-biofluid Interactions for Disease Models and Therapeutics | \$97,307 |
| Tracking Virus like Particles in Real Time in Cells to Guide Next Generation Vaccine Development | \$325,535 |
| Establishing a Tool for Hybrid Ultra-high Resolution Molecular and Structural Brain Imaging | \$799,243 |
| Storage, Transport, and Concentration of Critical Metals in Ore Deposits | \$793,047 |
| Experimental Platform for Probing Thermal Properties and Exotic Thermal Transport | \$415,310 |
| Next-generation Measurements of Complex Species Traits | \$105,504 |
| High-resolution Characterization of Patient-derived Transcriptomes in Heavily-mutated Skin Cancers | \$106,745 |
| Studying the Neural Basis of Interpersonal Interactions in Severe Mental Illnesses | \$139,528 |
| Video Rate Multiphoton Bessel Beam Imaging System | \$273,206 |
| High Resolution Intravital Imaging Platform to Assess Inflammation in the Pulmonary Vasculature | \$645,978 |
| An Elemental Analyzer Isotope Ratio Mass Spectrometer (EA-IRMS) for Stable Oxygen Isotope Analysis in Phosphates | \$264,716 |
| Mechanoadaptation and Whole Body Bioenergetics in Osteogenesis Imperfecta and other Metabolic Bone Diseases | \$445,302 |
| Infrastructure for the Establishment of a Riparian-River Ecohydrological Connectivity Observation Network (RECON) | \$139,988 |
| Functional Genomics Platform to Study Gene Function and Drug Development | \$140,000 |
| Autoantibodies and Molecular Mimicry with Gut Microbiota in Chronic Pain | \$173,458 |
| Exploring the Role of Extracellular Vesicles in Schistosoma Mansoni | \$254,691 |
| Machine Learning for Tackling Climate Change | \$107,866 |
| Characterizing Mechanisms of Therapeutic Resistance in Metastatic Cancers to Discover Novel Therapeutic Opportunities | \$100,000 |

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| The Vasculome of Hypertension and Small Vessel Disease | \$570,000 |
| Laboratory for Quantum Meta-Optics | \$379,606 |
| 30 projects | \$10,077,905 |

Polytechnique Montréal

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| Advanced Manufacturing of Adaptive Aerospace Structures | \$250,000 |
| Neuroprosthetic Technology Development Platform | \$147,554 |
| i-WASP: integrated Water system Analyses to support Sustainable management Plans | \$166,279 |
| Infrastructure pour la gestion adaptative des géo-infrastructures dans le contexte de la non-stationnarité climatique | \$169,737 |
| 4 projects | \$733,570 |

Université de Montréal

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| Unveiling Host-pathogen Molecular Interactions through a Systemic Approach Reinforced by Super-resolution Microscopy | \$275,508 |
| Electrophysiological Infrastructure for the Characterization and Modulation of Human Consciousness | \$129,923 |
| Elucidating Milk Quality using Fourier Transform InfraRed Spectroscopy and Flow Cytometry | \$323,825 |
| The Role of the Sperm Epigenome in Embryo Development and Intergenerational Disease Transmission | \$160,000 |
| High Resolution Characterization of the Immune Response During Acute and Chronic Liver Disease | \$621,000 |
| Studying Attentional Capacities in 3D Space using Glasses-free 3D Displays | \$274,761 |
| NutriMe-Kaskina Awacak: In-community Nutrition and Metabolic Research for Vulnerable Children and Adolescents | \$107,078 |
| Data Driven Robotics for the Real World | \$176,785 |
| Isolateurs de confinement de niveau 2 pour comprendre et moduler l'interaction volaille-pathogènes | \$124,554 |
| Dispositifs de formation favorisant des apprentissages durables par les élèves du primaire et du secondaire | \$174,290 |
| A Virtual Reality Platform for Controlled Neurophysiological Studies of Interactive Behavior in Naturalistic Environment | \$282,385 |
| Pain in Parkinson's Disease: Characterisation, Neural Origins and Non-invasive Neurostimulation | \$147,824 |
| Exploring the Plasticity of Hibernation Metabolism at High Resolution | \$316,341 |
| Novel Antibody Creation Platform for Treatment and Diagnosis of Human Diseases | \$270,031 |
| NanoPharm | \$358,865 |
| Créer un nouveau genre opératique pour la réalité augmentée : démocratisation, innovation, cocréation | \$133,458 |

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| 16 projects | \$3,876,628 |
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Université de Sherbrooke

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| Deep-immune Cell Phenotyping by Spectral Flow Cytometry to Advance Inflammatory Arthritis and TNBC Therapies | \$633,544 |
| Machine ALD pour développement de composés nitrures destinés aux applications photoniques, neuromorphiques et quantiques | \$260,000 |
| Collaborative Robotics Platform for Exploration and Rescue Missions | \$102,483 |
| Research Infrastructure for the Chemistry and Chronology of Ancient Coloring Materials | \$247,000 |
| Analyses élémentaires, thermiques et environnementales d'alliages et céramiques pour le stockage d'énergie renouvelable | \$172,441 |
| 5 projects | \$1,415,468 |

Université du Québec - École de technologie supérieure

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| Caractérisation rhéologique avancée de matériaux | \$160,000 |
| Low Temperature Evaporator for High Performing Organic Thin Film Transistors | \$160,000 |
| 2 projects | \$320,000 |

Université du Québec - Institut national de la recherche scientifique

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| A High-temperature Synthesis and Electrochemical Characterization Platform for Solid-state Battery Materials | \$130,460 |
| Plasma Excitation for Sustainable Chemistry (PIExSusChem) Laboratory | \$148,482 |
| Infrastructure for Next-generation Materials and Devices for Neuromorphic and Sustainable Energy Applications | \$164,251 |
| Laboratory of Advanced Nanomaterials and In situ Characterization for Sustainable Energy | \$125,551 |
| Aquisition of a Nano-flow Analyzer for the Multiparametric Characterizations of Bio-nanoparticles | \$179,924 |
| Ultrastructural Studies of the Bacterial Cell Envelope | \$179,939 |
| 6 projects | \$928,607 |

Université du Québec à Chicoutimi

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| Vers une meilleure gestion des brise-vent en bleuetières pour faire face aux enjeux climatiques futurs | \$101,000 |
| Infrastructure pour la recherche et le développement d'évaluation de risqué d'instabilité des massifs rocheux | \$122,990 |
| COPAC : Un projet de science citoyenne à la jonction entre sciences humaines et sciences de la santé | \$150,632 |
| Infrastructure de terrain pour la recherche en hydrogéomorphologie et en écologie des poissons | \$144,001 |

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| 4 projects | \$518,623 |
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Université du Québec à Montréal

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| M3Lab : Laboratoire mobile d'investigation multimodale en santé mentale et cognitive | \$204,501 |
| 1 project | \$204,501 |

Université du Québec à Rimouski

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| Développement de modèles bioénergétiques innovants pour un large éventail d'organismes aquatiques | \$123,906 |
| Transcrire la Nouvelle-France : une infrastructure numérique de gestion, de partage et d'analyse documentaire | \$170,191 |
| Système portable pour l'analyse des aléas littoraux dans l'Arctique | \$110,723 |
| 3 projects | \$404,820 |

Université du Québec à Trois-Rivières

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| Plateforme de phénotypage métabolique et de sensibilité thermique | \$161,855 |
| Monitoring the Impact of Shrubification on Energy, Water, Carbon Soil-atmosphere Exchanges in Permafrost Regions | \$121,123 |
| 2 projects | \$282,978 |

Université du Québec en Abitibi-Témiscamingue

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| Intégration de la capacité d'adaptation aux stress environnementaux dans les modèles de transfert de l'épinette blanche | \$50,000 |
| Système d'antenne intelligent corporel pour les mines souterraines profondes | \$75,000 |
| Étudier les cycles du C, de l'N, du P et du S pour comprendre la matière organique et les relations sols-plantes | \$75,000 |
| 3 projects | \$200,000 |

Université du Québec en Outaouais

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| Approche par bassin versant expérimental pour étudier les services écosystémiques rendus par les milieux hydriques | \$125,975 |
| High Precision Neurostimulation for the Treatment of Mental Health Disorders | \$124,799 |
| 2 projects | \$250,774 |

Université Laval

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| Development of Nanomedicine for the Treatment of Cholestatic Autoimmune Liver Diseases | \$202,671 |
| Infrastructure pour le suivi génomique de la biodiversité des écosystèmes d'eau douce | \$400,000 |

INNOVATION

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| Un environnement sécuritaire pour des animaux immunosupprimés | \$160,000 |
| Gas Sequencer and Non-invasive Blood Pressure Monitor for Research and Innovation in Cerebrovascular Physiology | \$80,762 |
| PEBAR: Platform for Evolutionary Biochemistry of Antimicrobial Resistance | \$436,444 |
| Dynamiques géomorphologiques des plaines pergélisolées en dégradation et rétroactions environnementales | \$93,307 |
| L'infrastructure de chromatographie pour mieux comprendre le changement planétaire dans les écosystèmes aquatiques | \$87,213 |
| Laboratoire d'intelligence sur la durabilité des chaînes d'approvisionnement bioalimentaires | \$151,450 |
| Imaging and Interrogation of Brain Circuits in Behaving Animals | \$119,010 |
| Interactions between Fatigue and Motor Learning: A Better Understanding for a Better Management | \$135,885 |
| Noradrenergic Modulation of Neuronal Activity during Learned Behaviors | \$144,093 |
| Laboratoire vivant de recherche en mobilité urbaine, intelligente et durable | \$473,718 |
| Urban Forestry Climate Adaptive and Resilience Laboratory (UFCAR Lab) | \$145,694 |
| Sex-difference in Cell Culture of Aortic Valve | \$80,000 |
| Nutritional Metabolomics for Cardiometabolic Disease: From Signature Identification to Prevention | \$125,398 |
| Influence of Dopamine on Motor Cortical Plasticity | \$119,994 |
| Soutenir les recherches sur les pratiques immersives et interactives-LAMIC/LANTISS | \$325,000 |
| Mechanistic Insights of Gut Microbiota and Metabolism using a Host Independent in Vitro SHIME System | \$79,392 |
| 18 projects | \$3,360,031 |

NOTE: As part of this announcement, an additional \$7,396,740 was awarded under the Infrastructure Operating Fund (IOF), a mechanism that assists institutions with the incremental operating and maintenance costs associated with the new infrastructure.