

John R. Evans Leaders Fund Backgrounder

Ontario

The Canada Foundation for Innovation (CFI) Board of Directors approved a contribution of \$24,739,317 to support 122 infrastructure projects in the province.

Project Title	Maximum CFI Contribution
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Carleton University

A Power Hardware-in-the-Loop Electric Machine Emulation Laboratory for Electric Vehicle Application	\$94,675
Development of Digital Technologies and XR Applications to Support Person-Centred Care	\$80,650
Quantifying the Impact of Occupant Behaviours on Residential Indoor Environmental Quality During Extreme Climate Events	\$82,170
Infrastructure for Multimodal Instrumentation in Image-Guided Robotic Surgery	\$332,600
The Carleton Computational Cluster for Sensitive Data (3C-SD)	\$448,000
Scalable and Sample-Efficient Multi-Agent Reinforcement Learning	\$150,000
Fabrication of Architected Synthetic Fibre Muscles for Implantable Devices	\$120,615
7 projects	\$1,308,710

Lakehead University

Securing Critical Infrastructure: Cyber-Secure Protection Systems for Next-Generation Power Grids	\$121,543
Integrated Low-Dropout Regulator Architectures for System-on-Chips: Enabling Energy-Efficient Power Management	\$88,691
2 projects	\$210,234

Laurentian University

Smart and Sustainable Mining Infrastructure: Sensor-integrated IoT and AI Systems	\$119,758
1 project	\$119,758

McMaster University

Advancing Solar Reforming for Sustainable Fuels and Circular Chemistry	\$150,000
Hydraulic Flume Lab for the Investigation of Riverine Processes	\$109,464
Research on Artificial Persons Laboratory	\$134,769

Evaluating the Functional Role of Vascular Endothelial Cells in Mucosal Inflammation in Vivo with Spectroscopic OCT	\$150,000
Advancing Canada's Sustainable Built Environment: Pathways with low-carbon and ultra-high-performance concretes	\$252,500
Laboratory for Nanoscale Ferroelectric Dynamics and Neuromorphic Devices	\$332,000
Bioenergetics Platform for Investigating Neuromuscular Biology in Health and Disease	\$80,000
Building Canadian Capacity to Use Firm/Workplace Microdata to Inform Policy	\$320,000
Multi-modal Imaging Plate Reader for Automating Aquatic Toxicology Research	\$126,453
9 projects	\$1,655,186

Nipissing University

Pursuing Excellence in Environmental Change Research at Nipissing University through Science Infrastructure Renewal	\$400,000
1 project	\$400,000

Queen's University

Biomedical Solutions to Monitor and Predict Cognitive Decline	\$125,000
Buried Infrastructure Response Measurement through High-definition Sensing	\$90,000
Flow and Wake Interactions in Next-generation Renewable Energy Systems	\$125,000
The Indigenous Hockey Research Network StoryLab: Where sport and story serve social change	\$138,000
Optic Neuropathy Pathophysiology and Translational Clinical (OPTIC) Project	\$80,000
Threshold-oriented Absolute Environmental Sustainability Assessment for Safeguarding Canada's Critical Minerals Supply	\$111,000
INSIGHT: Integrated Digital Twin Infrastructure for System-Level Hospital Analytics and Transformation	\$148,000
Toward Secure and Privacy Preserving Collaborative Intelligence for Space–Air–Ground Integrated Networks	\$120,000
8 projects	\$937,000

Toronto Metropolitan University

Real-Time AI for Compassionate Care	\$77,429
Monitoring the Response of Terrestrial Photosynthesis to Climate Change through Remote Sensing of Plant Physiology	\$81,000
Building Brain-Based Insights into Early Math Learning: A Portable fNIRS Approach	\$86,000
Embodied Artificial Intelligence for Decentralized Guidance, Navigation, and Control of Collaborative Space Manipulators	\$76,000
4 projects	\$320,429

Trent University

Spotlight: An Ultrafast Beamline for Molecular Dynamics and Materials Imaging	\$180,000
Global Contaminant Legacies and Emerging Threats: Building Transdisciplinary Pathways for Environmental Forensics	\$303,477
Communication Across the Lifespan: Age Differences, AI Interactions, and Clinical Interventions	\$160,000
3 projects	\$643,477

University of Guelph

High-dimensional Immune Profiling to Decipher Microbial Modulation of Host Responses	\$100,000
Laboratory for Fundamental and Applied Studies of Bacterial Cell Wall Biology	\$80,532
Structure-Guided Optimization of Chemically Modified Oligonucleotides for Biomedical Applications	\$125,000
3 projects	\$305,532

University of Ontario Institute of Technology

Large Language Model Computational Research Infrastructure	\$55,716
1 project	\$55,716

University of Ottawa

Epitaxial Magnetic Quantum Interfaces	\$216,253
Organic Neuromorphic AI Accelerator	\$297,513
Patient-centred Pain Control – Using Scrambler Therapy to Treat Chronic Nerve Pain	\$99,879
Infrastructure numérique de données de recherche dans la compréhension et la prévention du geste suicidaire	\$110,041
The Genetic Basis and Architecture of Adaptation to Contemporary Environmental Change	\$97,800
Phononic Gaps in Next Generation Heat Insulating Technology	\$327,562
Seeing Beneath Volcanoes: A Quantitative Spectroscopic Facility for Constraining Volatile-rich Magma Plumbing Systems	\$220,000
Earth System Evolution and Critical Mineral Formation during the Orosirian Period	\$225,394
8 projects	\$1,594,442

University of Toronto

Dissecting the Tumour Microenvironment Ecosystem to Overcome Treatment Resistance in Lymphoma	\$257,790
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Exploring the Multifactorial Development of Cardiovascular Disease	\$798,992
CERC-IDI: Canada Excellence Research Chair in Intelligent Digital Infrastructures	\$400,000
The ChemMicroEco Lab: Understanding and Engineering Microbiomes through Chemistry	\$225,000
Climate, Water and the Built Environment in the Lake Ontario-Saint Lawrence River-Gulf of Saint Lawrence System	\$100,000
Deciphering the Molecular and Cellular Mechanisms of Treatment Resistance in Gastric Cancer	\$273,710
Mapping Kidney Cancer Immune Evasion Genes for Next-generation Immunotherapy	\$332,635
Identification and Validation of Biomarkers for Multiple Sclerosis Through Next-generation Genomic Analysis	\$800,000
Global Surgical Artificial Intelligence Collaborative	\$378,905
Advancing Youth Mental Health Research with Digital Phenotyping Infrastructure	\$184,591
A Super-resolution Imaging Platform for the Elucidation of In Vivo Disease Mechanisms	\$763,454
STING-seq and Beyond: Infrastructure for Functional Dissection of Noncoding Genetic Variation	\$300,000
High Resolution Exploration of Meningioma Biology and Therapeutic Vulnerabilities	\$186,201
Expanding Access to Heart Transplantation in Canada Through Innovation in DCD Graft Preservation and Repair	\$341,088
Development of Renewable Freezing Technologies for Sustainable Mining in Cold Regions	\$100,000
Advanced Battery Laboratory (ABL): Accelerating Innovation in Electrochemical Energy Technologies	\$150,000
Validating a New Way to Breathe: Do smart ventilators help patients?	\$756,000
Automated Discovery of Therapeutic Peptides using an AI-guided Self-driving Laboratory Platform	\$250,000
Innovative Antibodies Targeting Post-translational Modifications for Research Tools and Cancer Therapy	\$441,724
A Machine Learning and Parallel Synthesis-enabled Platform for Therapeutic Discovery	\$796,271
Matrix Protein Mapping to Create Regenerative Oral Tissue Biomaterials	\$318,713
META-LGBTIQ Multimedia Inclusion Lab: Indicator Development, Tracking System, and Digital Media Repository (MFARR-Asia)	\$100,819
Assessing Ecosystem Interdependencies under Global Change	\$76,000
Mechanisms Controlling Early Pollen Development and their Misregulation Under Heat Stress	\$280,000
Echo Lab: Preserving the Performance of Legacy Computing	\$150,000

Mechanisms Regulating the Stem Cell Niche in Tissue Regeneration and Aging at Single Cell and Spatial Resolution	\$225,000
High Resolution Microscopy in Neurobiology: Organellar Dynamics through to Behaviour	\$781,724
Personalized Neuroscience for Multimodal, Scalable, Community-based Dementia Assessment, Early Detection, and Prevention	\$284,000
A Multi-scale Mechanical Testing Suite for Integrative Musculoskeletal Injury Research	\$340,000
Electroactive Molecules for Electrochemistry-driven Small Molecule Upgrading and Carbon Capture	\$150,000
Laboratory for Bioinspired Robotics and Locomotion	\$150,000
Decoding Blood Stem Cell Inflammation Across the Human Lifespan	\$240,326
Decoding Genetic and Transcriptomic Instability in Cancer using In Vivo Functional Genomics	\$300,000
Towards the LLM Causal Scientist for Scientific Causal Inference	\$200,000
34 projects	\$11,432,943

University of Waterloo

Advanced Material and Manufacturing Process Development through High Resolution Nano Indentation Measurements	\$113,500
Enabling Non-experts: AI-guided Fabrication for Assistive Technology	\$88,000
Universal Liquid Surface Characterization Platform for Assessing Multi-material Biointerfaces	\$136,500
Technologies for Shared Understanding in Hybrid Startup Teams	\$100,000
Advanced MicroCT for 3D Microstructural Mechanical Assessments	\$100,000
Ultrashort Pulsed Laser Writing of Multi Materials Thin Film Flexible Devices	\$105,000
Nanoscale 3D Printer for Two-photon Polymerization	\$411,000
Additive Manufacturing of Porous Materials for Electrochemical Devices	\$80,000
Advancing Legged Robot Perception for Real-world Conditions	\$120,000
Enhancing Pilot Training through Psychophysiological Data	\$76,194
GPU Accelerated Simulation Tools: From High-fidelity Numerical Methods to Robust Machine Learning	\$117,000
The Ripple Effect: Valuing Rivers through Bike-powered Community Science	\$65,000
Infrastructure for Data Intelligence	\$100,000
Future Cities Institute Research Infrastructure: Living Labs and CivicInquire Policy Platform	\$65,500
Multimodal Imaging System to Investigate mRNA Processing Dysfunction in Cell Identity Determination	\$115,000

Infrastructure for Advanced Respiratory Muscle Mechanics Research	\$100,000
Novel Electrochemical Storage Electrodes with Low Heat Generation Characteristics for Fast Charging Applications	\$80,000
Developing Tools for Studying the Essential Enzymes that Synthesize, Degrade, and Tailor the Bacterial Cell Wall	\$125,000
GPU-powered Physics-informed ML for Next-generation Electrochemical Interface Design	\$125,000
A Cryogenic Flow Visualization Infrastructure for Hydrogen Explosion Safety Research at Low-temperatures	\$140,000
Atomic force microscopy in inert atmosphere for air-sensitive solid-state battery materials	\$140,000
Advancing thermochemical recycling for plastics circularity under real-world conditions	\$124,788
22 projects	\$2,627,482

University of Western Ontario (The)

E4 Lab: Kahionhaktà:tye	\$141,161
Rock Mechanics for Climate Change Mitigation and Resilience	\$160,841
High-throughput, 4D Imaging of Human Organoid Models to Uncover Novel Mechanisms of Organ Development and Disorders	\$322,484
Infrastructure for Microbial Synthetic Biology and Biomanufacturing	\$200,000
Infrastructure for Spine Mechanics Research and Injury Prevention	\$228,158
Infrastructure to Enable the Development of Functional and Degradable Polymer Systems	\$103,967
129Xe Magnetic Resonance Imaging to Detect and Quantify the Reversal of Abnormal Remodeling in Airways Disease	\$281,992
Dynamic Cerebral Hemodynamics and Functional Aging: Portable Monitoring for Precision Interventions	\$81,000
8 projects	\$1,519,603

University of Windsor

Southwestern Institute for Forensic Taphonomy (SWIFT)	\$148,766
1 project	\$148,766

Wilfrid Laurier University

Advancing Understanding of Early Cardiovascular Risk Factors: A Cells-to-systems Approach	\$91,000
Scanning Electrochemical Microscopy for the Kinetic Analysis of Materials Interfaces	\$86,000



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IntegCore: An Integrated Computational and Experimental Platform for Advanced Biomolecular Research and Discovery	\$152,000
High-density Multi-well Microelectrode Arrays with Closed-loop Feedback for Intelligent Biocomputing	\$76,000
Understanding Change in Northern Fishes, Fisheries, and Aquatic Ecosystems	\$325,038
5 projects	\$730,038

York University

Regulation and Function of FAM72A in B Cell Immunity and Cancer	\$100,000
Single Particle Characterization System to Study Transformations of Atmospheric Particles over a Broad Size Range	\$100,000
Zebrafish Centre for Integrative Research in Endocrinology, Neurophysiology, and Environmental Sciences	\$235,000
Centre for Sustainable and Environmental Chemistry	\$210,000
Enhancement of the Behaviour-Centric Cybersecurity Center (BCCC) for Advancing AI-powered Threat Detection and Awareness	\$75,001
5 projects	\$720,001

NOTE:

As part of this announcement, an additional \$7,418,795 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.