Faculty of Engineering

Centre for Engineering Professional Practice and Engineering Education

Dr. Marcia Friesen
Engineering education, Mobile health applications in computer engineering

Dr. Jillian Seniuk Cicek
Engineering education - scholarship of teaching and learning in engineering education

Civil Engineering

Dr. Marolo Alfaro
Geosynthetics, soil/ground improvement, earth structures, northern infrastructure, field instrumentation and monitoring

Dr. Masoud Asadzadeh
Watershed Modelling, River-Reservoir and Water Distribution System Analysis

Dr. Mohamed Bassuoni
Infrastructure and building materials, durability of concrete, rehabilitation and sustainable concrete infrastructures

Dr. James Blatz
Geotechnical engineering including design of flood protection infrastructure, infrastructure management and planning

Dr. Young-Jin Cha
Smart sustainable structural systems using advanced structural health monitoring system and control technologies

Dr. Shawn Clark
River ice engineering, ecohydraulics, hydraulic structures

Dr. Karen Dow
Water Resources Engineering

Dr. Ehab El-Salakawy
Concrete structures, steel and FRP reinforcement, structural behaviour, FPR composites and fibre optic sensors

Dr. Beata Gorczyca
Potable water treatment, particle analysis, disinfection, heavy metal removal, water chemistry
Dr. Hartmut Holländer
Hydrogeology, Groundwater Modelling, Hydrology, Geochemistry, Water Science, Environmental Science & Engineering

Dr. Mohamed Issa
Sustainability in Construction, ICT in Construction, Construction Health and Safety Management

Dr. Miroslava Kavgic
Energy use in buildings, innovative building materials, sustainable building design

Dr. Pooneh Maghoul
Geomechanics, Multiphase Porous Mechanics, Unsaturated Soils, Soil Dynamics

Dr. Babak Mehran
Optimization of traffic operations and public transportation systems, traffic flow modelling, intelligent transportation systems

Dr. Jan Oleszkiewicz
Water pollution control, nitrogen/phosphorus removal, sludge to biosolids, anaerobic treatment, hormone removal

Dr. Jonathan Regehr
Freight transport systems, traffic engineering and modelling, traffic information systems, railroad engineering

Dr. Ahmed Shalaby
Pavement engineering, infrastructure engineering and management

Dr. Tricia Stadnyk
Hydrological simulation & prediction, water isotopes, climate change impact, water-availability for hydropower production

Dr. Dagmar Svecova
Prestressed concrete structures, timber structures reinforced or strengthened with FRP

Dr. Qiuyan Yuan
Nutrient removal and recovery, leachate & wastewater treatment, solid waste, biomass, fermentation, anaerobic digestion

**Electrical and Computer Engineering**

Dr. Udaya Annakkage
Power System Stability, FACTS, HVDC converters, wind energy systems
Dr. Ahmed Ashraf
Information & Computing Systems, Biomedical Engineering

Dr. Faouzi Bellili
Signal Processing and Wireless Communications

Dr. Gregory Bridges
Biomedical and Electrical Biosensors, Sensors, Applied Electromagnetics

Dr. Douglas Buchanan
Micro- Nano-electronic Materials and Devices, MEMs-based ultra-sonic transducers

Dr. Ken Feren
Telecommunications, Embedded Systems, Distributed Computing

Dr. Shaahin Filizadeh
Power systems transient simulation; power electronics; electric and hybrid vehicles

Dr. Aniruddha Gole
Power systems simulation, flexible AC Transmission systems (FACTS), High Voltage DC Transmission (HVDC)

Dr. Carl Ho
Power Electronics, Energy Efficiency, Renewable Energy Technologies, Smart Grids and Micro Grids

Dr. Ekram Hossain
Wireless communication networks, cognitive radio system, multimedia communications over wireless and mobile networks

Dr. Dustin Isleifson
Electromagnetics and Remote Sensing

Dr. Ian Jeffrey
Applied and Computational Mathematics, High Performance Computing, Parallel Programming, Electromagnetics

Dr. Witold Kinsner
Software/hardware computing engines for signal and data compression in cognitive machines and systems

Dr. Behzad Kordi
Condition monitoring of high voltage apparatus, electromagnetic modeling of power transmission lines
Dr. Joe LoVetri
Time domain computational EM, modeling of EMC problems, ground penetrating RADAR, microwave tomography

Dr. Arkady Major
Laser photonics, biophotonics, solid-state lasers

Dr. Bob McLeod
Simulation and Modeling Complex Dynamical and Social Systems, Mobile Game Development

Dr. Dean McNeill
Embedded systems, structural health monitoring, adaptive signal processing, and real-time and ubiquitous computing

Dr. Puyan Mojabi
Applied Electromagnetics

Dr. Zahra Moussavi
Biomedical Engineering, instrumentation, biological signal processing, and rehabilitation

Dr. Vladimir Okhmatovski
Computational Electromagnetics, High Performance Computing, Electronic Design Automation

Dr. Derek Oliver
Assessment of HV insulators, scanning probe microscopy, nanoscale and molecular electronics

Dr. Miloslaw Pawlak
Machine Learning and Pattern Recognition, Statistical Signal Processing

Dr. Athula Rajapakse
Power system protection, monitoring and control, renewable energy integration, active distribution systems and microgrids

Dr. Cyrus Shafai
Micro/nano-electro-mechanical systems, MEMS, micro-sensors, RF MEMS, MOEMS, adaptive optics

Dr. Sherif Sherif
Optical coherence tomography, optical and fluorescence microscopy, tissue optics, laser spectroscopy

Dr. Gabriel Thomas
Digital Signal and Image Processing. Ultrasound Non Destructive Testing

Dr. Douglas Thomson
Electronic Sensors of Dielectrophoretic actuation, Sensors for Structural Health Monitoring
Dr. Pradeepa Yahampath
Signal Processing and Communications

**Mechanical Engineering**

Dr. Subramaniam Balakrishnan
Computer Assisted Industrial Engineering, Computer Integrated Manufacturing, Robotics

Dr. Eric Bibeau
Kinetic turbines, biomass, wind turbine icing, plug-in electric vehicles, district Energy Systems

Dr. Madjid Birouk
Combustion of fuels and bio-fuels, fuel nozzles, droplets gasification, swirling flows

Dr. Vijay Chatoorgoon
Aerospace Engineering, Acoustic Wave Propagation, Supercritical Flow Stability

Dr. Chuang Deng
Atomistic modeling and simulations, yielding and plasticity in nanocrystalline materials, grain boundaries

Dr. Philip Ferguson
Satellite, Attitude Control, Navigation, Space Objects, Composites, Reaction Wheels, Drones, Simulation, Orbit Control

Dr. Raghavan Jayaraman
Polymer and Composite Processing, Durability & Interfaces in Polymers and Composites, Novel Composite Materials

Dr. Matt Khoshdarregi
Advanced Manufacturing, Industrial Robotics, Machining, CNC Design, Instrumentation and Mechatronics

Dr. David Kuhn
Multiphase flow in complex geometries, modelling of abdominal aortic aneurysms

Dr. Xihui (Larry) Liang
System Dynamics, Condition Monitoring, Fault Analysis, Reliability, Intelligent Maintenance, Big Data, Machine Learning

Dr. Yunhua Luo
Biomedical Image Construction, Applied Mechanics and Design, Materials Science and Engineering
Dr. Olanrewuju Ojo
Materials Science and Engineering, Processing-Microstructure-Property relationship studies

Dr. Scott Ormiston
Modeling of film condensation, heat exchanger shell-side flows, slab foundation heat loss, microchannels

Dr. Qingjin Peng
Virtual manufacturing, Sustainable product, Modeling and simulation, Product adaptability

Dr. Nariman Sepehri
Teleoperation and Robotics, Control Systems, Systems Modelling and Identification, Actuators and Fluid Power

Dr. Mark Tachie
Experimental Fluid Dynamics, Turbulent Flows Over Rough Surfaces, Laser Doppler Velocimetry, Particle Image Velocimetry

Dr. Igor Telichev
Fracture Mechanics, Nanomechanics and Computational Material Science, Mechanics of Composite Materials

Dr. BingChen Wang
Computational fluid dynamics, turbulent flow, convective heat transfer, bio-fluids, high-performance computing

Dr. Nan Wu
Structural Health Monitoring, Structural Repair and Enhancement, Energy Harvesting, Nanotechnology

Dr. Malcolm Xing
Biomaterials, Nanomedicine, Tissue Engineering, 3D Bioprinting, Nanoenergy, Biosensor

Dr. Guozhen Zhu
Material Science and Engineering