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
➢ Geosynthetic-reinforced earth structures, ground improvement techniques, earthfill dams, northern infrastructure

Dr. Masoud Asadzadeh
➢ Watershed Modeling, Model Calibration, River-Reservoir Systems Modeling, and applications of optimization and sensitivity analysis in water resources engineering

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
➢ River ice engineering, experimental fluid mechanics, computational hydraulics

Dr. Ehab El-Salakawy
➢ Concrete structures, steel and FRP reinforcement, structural behaviour, seismic performance of FRP-RC frames and hollow-core slabs

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. Pooneh Maghoul
- Computational Geomechanics, Numerical Modeling, Energy Geo-Structures, Northern Infrastructure, Climate Change, 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, performance of highway materials, infrastructure engineering and management, design of sustainable infrastructure

Dr. Dagmar Svecova
- Precast prestressed concrete bridge deck connections; Use of Ultra-high performance concrete in accelerated bridge construction; durability of concrete under temperature and fatigue loading.

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 Ferens
➢ Telecommunications, Embedded Systems, Distributed Computing

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

Dr. Colin Gilmore
Applied Electromagnetics, Electromagnetic Inversion

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 systems, 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. Amine Mezghani
➤ Wireless Communication, Joint Communication and Sensing, Large-Scale Signal Processing, Hardware Constrained Radio, Antenna Theory

Dr. Puyan Mojab
➤ 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. Elham Salimi
➢ Microfluidics, Biosensors, and Bioelectromagnetics

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 Bibeu
➢ 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 Chattoorgoon
➢ 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, Nano-technology

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

Dr. Guozhen Zhu
- Material Science and Engineering