June 2, 2019 (Sunday)

4:00 PM - 7:00 PM	**Registration and Welcome Reception (Amit Chakma Engineering Building Atrium)**

June 3, 2019 (Monday)

8:00 AM - 4:00 PM	**Conference Registration (Amit Chakma Engineering Building Atrium)**
8:30 AM - 9:30 AM	**Plenary Session (Ivey BMO Auditorium): "Artificial Knees: Can They Benefit from New Technologies?" (Peter Walker, New York University)**
9:30 AM - 10:00 AM	

	Session L-1 (Large Eddy Simulation) Room: SEB 1200	Session M-1 (Free Surface Flows) Room: SEB 2200	Session N-1 (Heat and Mass Transfer I) Room: SEB 2202	Session O-1 (Applications I) Room: SEB 3109
10:00 AM - 10:20 AM	**Large Eddy Simulation Using the High-Order Flux Reconstruction Approach** (Keynote Presentation) Brian Vermeire* (Concordia University)	**Computing Waves Under Ice** Olga Trichtchenko (Western University); Emilian Parau (University of East Anglia)	**Optimal Configuration Of Angled Rib Turbulators For Conjugate Heat Transfer Simulation** Ramin Jalali (Sharif University of Technology); Masoud Darbandi (Sharif University of Technology); Ashkan Bagherzadeh (Sharif University of Technology); Gerry Schneider (University of Waterloo)	**A Look Inside a Heart With Cardiomyopathy and Transcatheter Aortic Valve Replacement: An Imaged-Based Fluid-Structure Interaction Modeling Study** Seyedvahid Khodaei (McMaster University); Reza Sedeghi (McMaster Universisty); Ali Emadi (McMaster University); Zahra Motamed (McMaster University, Massachusetts Institute of Technology)
10:20 AM - 10:40 AM		**Simulations of Self-Propulsion Model Tests of a Fishing Vessel Using a Body-Force Method Coupled With a RANS Solver** Md. Ashim Ali (Memorial University); Heather Peng (Memorial University); Wei Qui (Memorial University)	**Natural Convective Heat Transfer From Two Parallel Thin Circular Vertically Spaced Axially Aligned Horizontal Isothermal Plates of Different Diameter** Patrick Oosthuizen (Queen's University)	**Patient-Specific Simulation of Coarctation Using Lattice Boltzmann Method and Lumped Parameter Modelling** Reza Sedeghi (McMaster Universisty); Seyedvahid Khodaei (McMaster University); Zahra Motamed (McMaster University, Massachusetts Institute of Technology)
10:40 AM - 11:00 AM	**Analysis of High-Order Element Types for Implicit Large Eddy Simulation** Carlos Pereira (Concordia University); Brian Vermeire (Concordia University)	**Modelling Requirements for Dynamic Multiphase Ship Simulations** Chunhui Liu (University of Waterloo); Xiaohua Wu (Royal Military College); Kevin McTaggart (DRDC); Jean-Pierre Hickey (University of Waterloo)	**A Numerical Study of The Effect of Thin Horizontal and Vertical Adiabatic Side Extensions on Natural Convective Heat Transfer From a Downward Facing Heated Horizontal Isothermal Surface** Patrick Oosthuizen (Queen's University); Jane Paul (Queen's University)	**Validation of rhoCentralFoam for Numerical Modelling of Underexpanded Free Jets Impinging on Plates** Peter Nielsen (Western University); Christopher DeGroot (Western University); Anthony Straatman (Western University)
11:00 AM - 11:20 AM	**Stabilizing Filters for High-Order Implicit Large Eddy Simulation** Mohsen Hamedi (Concordia University); Brian Vermeire (Concordia University)	**Numerical Simulations of Two-Body Interaction in Waves** Wei Meng (Memorial University); Heather Peng (Memorial University); Wei Qiu (Memorial University)	**Surrogate Model for Predicting Real-Time Airflow and Temperature Distributions in Data Centers** Sahar Asgari (McMaster University); Peiying Tsai (McMaster University); Ishwar Puri (McMaster University); Rong Zheng (McMaster University)	**Evaluating Floc Strength Using CFD for Primary Wastewater Treatment** Brooke Remler (Western University); Christopher DeGroot (Western University)
11:20 AM - 11:40 AM	**Assessment of Error Estimators for Grid Adaptation for LES Application** Yao Jian (McGill University); Siva Nadarajah (McGill University)	**Study of Inertial Coalescence of Droplets on a Solid Substrate Using Lattice Boltzmann Modelling** Nilesh Pawar (IIT Delhi); Supreet Bahga (IIT Delhi); Sunil Kale (IIT Delhi); Sasidhar Kondaraji (IIT Bhubaneswar)	**A Numerical Study Of Natural Convective Heat Transfer From A Two-Sided Circular Horizontal Isothermal Element Having A Linearly-Inclined Nonflat Surface** Rafiq Manna (Queen's University); Patrick Oosthuizen (Queen's University)	**Numerical Investigation of the Impact of Manufacturing Tolerences on Marine Propeller Performance** Shanqin Jin (Memorial University); Ruosi Zha (Memorial University); Heather Peng (Memorial University); Wei Qiu (Memorial University); David Hally (DRDC); Matthew Gauthier (DRDC); Bodo Gospodnetic (Dominis Engineering)
11:40 AM - 12:00 PM	**Influence of Rib Height in a Rib-Roughened Square Duct on Turbulent Flow Using Large-Eddy Simulation** Alex Czehryn (Univerisyt of Manitoba); Vahid Mahmoodi (University of Manitoba); Bing-Chen Wang (University of Manitoba)	**Performance Analysis of a Vertical Axis Hydrokinetic Turbines Array** Bayram Mohamed (University of Calgary); Artem Korobenko (University of Calgary)	**A Numerical Study of the Forced Convection Boiling of Nanofluid Refrigerant** Daniel Bahamon (Universidad Pontificia Bolivariana); César Nieto-Londoño (Universidad Pontificia Bolivariana)	**Numerical Modeling of a Freeze Desalination Process** Ghobad Amini (American University of the Middle East); Jamal Jamali (American University of the Middle East)
12:15 PM - 1:00 PM	**Lunch**			
1:00 PM - 2:00 PM	**Plenary Session (Ivey BMO Auditorium): "Petascale Supercell Thunderstorm Simulations and New Hypothesis for Tornado Formation and Maintenance" (Leigh Orf, University of Wisconsin)**			
2:00 PM - 2:30 PM	**Coffee Break (Amit Chakma Engineering Building Atrium)**			

	Session L-2 (Algorithms) Room: SEB 1200	Session M-2 (Environmental Flows) Room: SEB 2200	Session N-2 (Heat and Mass Transfer II) Room: SEB 2202	
2:30 PM - 2:50 PM	**Vorticty-Based Polynomial Adaptation for Moving And Deforming Domains** Ramin Ghoreishi (Concordia University); Brian Vermeire (Concordia University)	**Mixing In The Brazil Basin** Kelly Ogden (Western University); Raffaele Ferrari (Massachusetts Institute of Technology)	**Numerical Modeling of N-Heptane Injection and Combustion in the Ignition Quality Tester With ANSYS Forte** Osama Hmood (Carleton University); Edgar Matida (Carleton University)	
2:50 PM - 3:10 PM	**Deep Neural Networks for Non-Ideal Property Evaluation in Supercritical Flows** Petro Junior Milan (Georgia Institute of Technology); Jean-Pierre Hickey (University of Waterloo); Zhaoyi Xu (Georgia Institute of Technology); Vigor Yang (Georgia Institute of Technology)	**BIM-CFD Integrated Design Process Examples For Northern Architecture** Muna Younis (Western University); Girma Bitsuamlak (Western University); Meseret Kahsay (Western University)	**Soot Formation in a Steam-Introduced Kerosene Combustor** Masoud Darbandi (Sharif University of Technology); Majid Ghafourizadeh (Sharif University of Technology); Gerry Schneider (University of Waterloo)	
3:10 PM - 3:30 PM	**Investigation of Advection-Diffusion Problems and Simulations Using the Lattice Boltzmann Method and the ArrayFire Library for High-Performance Computing on GPU** Michael Ho (Polytechnique Montréal); Jesús Pérez (Polytechnique Montréal); Sébastien Leclaire (Polytechnique Montréal); Marcelo Reggio (Polytechnique Montréal); Jean-Yves Trépanier (Polytechnique Montréal)	**A More Reliable Estimate For External Convective Heat Transfer Coefficient From Building Surfaces in an Urban-Setting** Anwar Awol (Western University); Girma Bitsuamlak (Western University); Fitsum Tariku (British Columbia Institute of Technology)	**CFD Modelling of Flow and Heat Transfer in a Thermosyphon** Dwaipayan Sarkar (Western University); Christopher DeGroot (Western University); Eric Savory (Western University)	
3:30 PM - 3:50 PM	**Paired Explicit Runge-Kutta Schemes For Computational Aerodynamics** Siavash Nasab (Concordia University); Brian Vermeire (Concordia University)	**The Actuator Line Method For Wind Turbine Modelling Applied In A Variational Multi-Scale Framework** Michael Ravensbergen (University of Calgary); Artem Korobenko (University of Calgary)	**A New Framework For The Prediction Of Radiative Phenomena** William Morin (University of Ottawa); James McDonald (University of Ottawa)	
3:50 PM - 4:10 PM	**Improved Approximations For The Maximum-Entropy Fourteen-Moment Closure Of Gas Dynamics** Fabien Giroux (University of Ottawa); James McDonald (University of Ottawa)	**Flutter Instability of a Flat Plate Deforming With Large Amplitude to Align With the Fluid Flow** Mohammad Tari (Polytechnique Montréal); Frederick Gosselin (Polytechnique Montréal); Eric Laurendeau (Polytechnique Montréal)	**A Numerical Evaluation ff Nanofluid Multiphase Flows for Different Micro-Heat Exchanger Geometries** Daniel Bahamon (Universidad Pontificia Bolivariana); César Nieto-Londoño (Universidad Pontificia Bolivariana)	
4:15 PM - 4:35 PM	**Undergraduate Poster 3-Minute Thesis Presentations (SEB 1200)**			
5:00 PM - 7:30 PM	**Various Tours**			

June 4, 2019 (Tuesday)

8:00 AM - 4:00 PM	**Conference Registration (Amit Chakma Engineering Building Atrium)**
8:30 AM - 9:30 AM	**Plenary Session (Ivey BMO Auditorium): "Advances in Numerical Modelling of Flow, Heat, and Mass Transfer in Heterogeneous Media" (Marcelo de Lemos, Instituto Tecnológico de Aeronáutica)**
9:30 AM - 10:00 AM	**Coffee Break & CFDSC Undergraduate Poster Display (Amit Chakma Engineering Building Atrium)**

	Session L-3 (Porous Media) Room: SEB 1200	Session M-3 (Turbulence I) Room: SEB 2200	Session N-3 (Multiphase Flows I) Room: SEB 2202	
10:00 AM - 10:20 AM	**Airflow Balancing of a Produce Drying Chamber Using a Porous Media Approach** (Keynote Presentation) Mahmoud Elhalwagy (Western Univeristy); Anthony Straatman* (Western University)	**Mechanism For Transition To Turbulence in a Laminar Separation Bubble on an Airfoil** (Keynote Presentation) Joshua Brinkerhoff* (University of British Columbia)	**Numerical Study of Atomization Mechanisms of Laminar Liquid Jets in High-Viscous Gaseous Crossflows** Mohammad Hashemi (Concordia University); Mehdi Jadidi (Concordia University); Ali Dolatabadi (Concordia University)	
10:20 AM - 10:40 AM			**A Multi-Region CFD Model for Aircraft Ground Deicing by Liquid Spray** Sami Emez (École de Technologie Supérieure); François Morency (École de Technologie Supérieure)	
10:40 AM - 11:00 AM	**Extension of Dynamic Heat and Mass Transfer Coupling to Turbulent Flow at Fluid/Porous Interfaces of Different Permeability** Mahmoud Elhalwagy (Western Univeristy); Anthony Straatman (Western University)	**Effect of Free-Stream Turbulence on Turbulent Boundary Layers From Flat Plates** Ivian Magalhaes (Western University); Eric Savory (Western University)	**Advances and Challenges in Simulation of LNG Behavior Inside a Tank** Ehsan Tahmasebi (University of British Columbia); Aaron Stroda (University of British Columbia); Sai Pendli (University of British Columbia); Joshua Brinkerhoff (University of British Columbia)	
11:00 AM - 11:20 AM	**Modeling of Cathode Oxygen Transport in Polymer Electrolyte Membrane Fuel Cells Based on Measured Permeability and Effective Diffusivity** Jian Zhao (University of Waterloo); Xianguo Li (University of Waterloo)	**Application of Recurrence CFD to Study Mass Transport in Turbulent Vortex Shedding After a Cylinder** Sanaz Abbasi (Johannes Kepler University); Thomas Lichtenegger (Johannes Kepler University)	**Mass-Density-Based Model Using a Gaussian Moment Method for Polydisperse Multiphase Flow** James McDonald (University of Ottawa); Jarod Ryan (University of Ottawa); Lucian Ivan (Canadian Nuclear Laboratories)	
11:20 AM - 11:40 AM	**Prediction of the Overall Performance of Catalyst-Coated Particulate Filters Using a Lattice Boltzmann-Based Model** Igor Belot (Polytechnique Montréal); David Vidal (Polytechnique Montréal); François Bertrand (Polytechnique Montréal); Martin Votsmeier (Umicore); Barry van Setten (Umicore); Robert Greiner (Umicore); Robert Hayes (University of Alberta)	**Simulations of 3D Turbulent Flow Around a Circular Pier With a Splitter Plate** Salar Kheshtgar (Concordia University); Samuel Li (Concordia University)	**The Effects of Turbulent Models on Multiphase Flashing Flow** Tarek Nigim (University of Alberta); Lei Li (University of Alberta); Carlos Lange (University of Alberta)	
11:40 AM - 12:00 PM		**Organized Motion of Turbulent Flow at Low Reynolds Number in a Square Duct** Hamid Khan (IIT Delhi); Syed Anwer (Aligargh Muslim University); Nadeem Hasan (Aligargh Muslim University); Sanjeev Sanghi (IIT Delhi)		
12:15 PM - 1:00 PM	**Lunch and CFDSC Annual General Meeting (ACEB 1410)**			
1:00 PM - 2:00 PM	**Plenary Session (Ivey BMO Auditorium): Advanced Materials for Energy Storage and Conversion: From Nano Scale to Single Atoms (Andy Sun, Western University)**			
2:00 PM - 2:30 PM	**Coffee Break & CFDSC Undergraduate Poster Display (Amit Chakma Engineering Building Atrium)**			

	Session L-4 (Applications II) Room: SEB 1200	Session M-4 (Turbulence II) Room: SEB 2200	Session N-4 (Multiphase Flows II) Room: SEB 2202	
2:30 PM - 2:50 PM	**Numerical Investigation of the Thermodynamics Behaviors in the Central Downward Circular Tube of the 64-Element Canadian SCWR Fuel Bundle** Huirui Han (Western University); Chao Zhang (Western University)	**Numerical Study of Turbulent Heat Transfer of a Radially-Rotating Circular Pipe Flow** (Keynote Presentation) Zhao-Ping Zhang (University of Manitoba); Bing-Chen Wang* (University of Manitoba); Dao-Qi Liu (Inner Mongolia University of Technology)	**Application of a Piecewise Barotropic Equation of State in a Homogeneous Equilibrium Mixture (HEM) Cavitation Model** Saeed Rahbarimanesh (University of British Columbia); Joshua Brinkerhoff (University of British Columbia); Ioannis Karathanassis (University of London); Manolis Gavaises (University of London)	
2:50 PM - 3:10 PM	**Permeability Tensor Orientation and its Effect on Resin Transfer Molding** Anthony Sherratt (Western University); Christopher DeGroot (Western University); Anthony Straatman (Western University)		**Modification of the CFD Model Based on the Bubble Size for the Three-Phase Flow in an Inverse Fluidized Bed** Yunfeng Liu (Western University); Zeneng Sun (Western University); Chao Zhang (Western University); Jesse Zhu (Western University)	
3:10 PM - 3:30 PM	**Computational Studies of the Aerodynamics of a Simplified Miata MX-5** Wing Yi Pao (UOIT); Remon Pop-Iliev (OUIT); Ghaus Rizvi (OUIT); Martin Agelin-Chaab (OUIT)	**The Rod-Airfoil Problem: Capabilities and Limitations of Quasi-Two Dimensional Computations for Prediction of Near-Field Velocity Fluctuations** Hanieh Param (University of Windsor); Jeffrey Defoe (University of Windsor)	**CFD Simulation of Bubble Column Reactors in the Presence of Internals** Glen Dsouza (Western University); Tuntun Gaurav (Western University); Chao Zhang (Western University); Anand Prakash (Western University)	
3:30 PM - 3:50 PM	**Oblique CFD Analysis of Open-Wheel Race Car With Circuit-Tailoring Shape Optimization** Mark Lin (San Jose State University); Periklis Papadopoulos (San Jose State University)	**Large Eddy Simulation of Turbulent Flow in Ice-Covered Channels** Rui Zeng (Concordia University); Samuel Li (Concordia University)	**CFD-PBM Study of Bubble Column Reactor Integrated with Mass Transfer Calculations** Ahmed Khalil (Western University); Christopher DeGroot (Western University)	
3:50 PM - 4:10 PM	**Development of a Formula SAE Front Wing with an Emphasis on Additional Aerodynamic Devices** Davin Jankovics (OUIT); Martin Agelin-Chaab (OUIT); Ahmad Barari (OUIT)	**Simulation of Shallow Open-Channel Flow Past a Vertical Cylinder Using IDDES-VOF Approach** Subhadip Das (University of Windsor); Vimaldoss Jesudhas (University of Windsor); S. Abishek (University of Windsor); Ram Balachandar (University of Windsor); Ronald Barron (University of Windsor)	**Numerical Study of Droplet Behavior Using Lattice Boltzmann Method** Zhe Chen (University of Alberta); Alexandra Komrakova (University of Alberta)	
4:10 PM - 4:30 PM	**CFD Investigation of Compressible Flow Effects on Performance Criteria of Inflow Control Devices** Jean-Luc Olsen (University of Alberta); Matthew Miersma (University of Alberta); Carlos Lange (University of Alberta)	**Hyperbolic Turbulence Models for Moment-Closure Solvers** Chao Yan (University of Ottawa); James McDonald (University of Ottawa)	**Novel Impeller Designs for Bioreactor Applications: CFD Analysis Of Shear Stress** Sinthuran Jegatheeswaran (Ryerson University); Farhad Ein Mozaffari (Ryerson University)	
4:30 PM - 5:15 PM	**NSERC Panel on Grants and Scholarships (ACEB 1410)**			
6:00 PM - 9:30 PM	**Congress Banquet**			

June 5, 2019 (Wednesday)

8:00 AM - 4:00 PM	**Conference Registration (Amit Chakma Engineering Building Atrium)**
8:30 AM - 9:30 AM	**Plenary Session (Ivey BMO Auditorium): Resilient Manufacturing System (Ruxu Du, South China University of Technology)**
9:30 AM - 10:00 AM	**Coffee Break**

	Session L-5 (Aerodynamics) Room: SEB 1200	Session M-5 (Particulate Flows) Room: SEB 2200	Session N-5 (Non-Newtonian Flows) Room: SEB 3109	
10:00 AM - 10:20 AM	**Unsteady Simulation of the Rotor Caradonna & Tung with SU2** Ahmed Mkaouar (École de Technologie Supérieure); François Morency (École de Technologie Supérieure)	**Revisting Solid-Liquid Mixing Through The Development Of An Open-Source CFD-DEM Model** (Keynote Presentation) Bruno Blais* (Polytechnique Montréal)	**Numerical Simulation of the Forced Oscillations of a Wire In Newtonian and Shear-Thinning Fluids** (Keynote Presentation) Cameron Hopkins (Western Univerisy); John de Bruyn* (Western University)	
10:20 AM - 10:40 AM	**Numerical Simulation of Parallel Airfoil Vortex Interactions at Low Reynolds Number Using Detached-Eddy Simulation** Nicholas Ogrodnik (Carleton University); Edgar Matida (Carleton University)			
10:40 AM - 11:00 AM	**Hybrid Flow Control for Micro Aerial Vehicle** Ali Esmaeili (Sharif University of Technology); Masoud Darbandi (Sharif University of Technology); Gerry Schneider (University of Waterloo)	**Development of a CFD-DEM Model in Non Inertial Frame for Solid-Liquid Mixing Applications** Bastien Delacroix (Polytechnique Montréal); Bruno Blais (Polytechnique Montréal); Louis Fradette (Polytechnique Montréal); François Bertrand (Polytechnique Montréal)	**Stability Analysis Of Viscoplastic Fluids with Wall Slip Boundary Conditions** Sayed Taghavi (Université Laval); Hossein Rahmani (Université Laval)	
11:00 AM - 11:20 AM	**An Introduction to The Real Based Method for 3D Aerodynamic Analysis of the Insect Flyers at Low Reynolds Numbers** Nasim Chitsaz (University of South Australia); Natania Yap (University of South Australia); Romeo Marian (University of South Australia); Javaan Chahl (University of South Australia)	**Coupled CFD-DEM Model to Simulate Two-Particle Settlement in a Newtonian Fluid: A Grid Comparison** Fatemeh Razavi (University of Alberta); Alexandra Komrakova (University of Alberta); Carlos Lange (University of Alberta)	**Effect of Flow and Elasticity on Nematic Liquid Crystal Lubricants** Arash Nikzad (University of British Columbia); Dana Grecov (University of British Columbia)	
11:20 AM - 11:40 AM	**Numerical Study of Roundness Effect on Flow Around a Circular Cylinder** Ran Wang (University of Windsor); Shaohong Cheng (University of Windsor)	**Variational Data Assimilation Using a Polydisperse Gaussian Model for Short Range Atmospheric Dispersion Of Radionuclides** François Forgues (University of Ottawa); James McDonald (University of Ottawa); Volodymyr Korolevych (Canadian Nuclear Laboratories); Luke Lebel (Canadian Nuclear Laboratories); Lucian Ivan (Canadian Nuclear Laboratories)	**Analyzing the Effect of Rheology of Non-Newtonian Fluids in Gas Dispersion With a Coaxial Mixer Through Tomography and CFD** Maryam Jamshidzadeh (Ryerson University); Farhad Ein-Mozaffari (Ryerson University); Ali Lohi (Ryerson University)	
11:40 AM - 12:00 PM		**Numerical Solution of Multiphase Flow Using New High-Order Moment-Based Eulerian Methods** Andrée-Ann Dion Dallaire (University of Ottawa); François Forgues (University of Ottawa); James McDonald (University of Ottawa); Lucian Ivan (Canadian Nuclear Laboratories)		
	End of the CSME-CFDSC Congress 2019			