

Start Time	End Time	<b>SUNDAY</b>
18:00	20:00	<b>Joint Reception with the CMS Summer Meeting and Early Registration</b> Lister Centre, Maple Leaf Room

Start Time	End Time	<b>MONDAY (A)</b>
07:30	08:00	Registration (CCIS L2-200)
08:00	08:15	<b>Opening Ceremony</b>
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> Ripples on icicles Chair: Rouslan Krechetnikov
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Rigorously verified computing for infinite dimensional nonlinear dynamics: a functional analytic approach Chair: Pauline van den Driessche
09:55	10:30	Coffee Break
10:30	11:20	<b>Joint Plenary Talk with the CMS Summer Meeting</b> A. Bertozzi (ED N2-115)

Title & Author		Room Number
Session Title: A1	<i>Large Scale Scientific Computing in Science and Engineering</i> Chair: Yves Bourgault	CAB 235

11:20	11:45	<b>Adaptive and non-adaptive spline collocation methods for PDEs with discontinuous coefficients: application to brain cancer growth</b> Christina Christara
11:45	12:10	<b>Multigrid methods with space-time concurrency</b> Scott MacLachlan
12:10	12:35	<b>High performance computing for the numerical simulation of particle-laden flows</b> Anthony Wachs
11:20	12:35	<b>Jupyter Workshop, joint with CMS (CAB 269)</b>
12:35	14:00	<b>Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)</b>
13:30	14:30	<b>Joint CMS/CAIMS NSERC Information Session (CAB 239)</b>
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi
14:50	15:20	Coffee Break
15:20	15:45	<b>Analysis of fluid structure interaction problems using an embedded strategy for GPGPU's</b> Marcela Cruchaga
15:45	16:10	<b>Conservative time second-order characteristic schemes for environmental computations</b> Dong Liang

16:10	16:35	<b>High-order semi-implicit time-stepping schemes for unsteady incompressible flows</b> Kak Choon Loy		
16:35	16:45	Break		
		Session Title: A2	<i>Recent Advances in Scientific Computing</i>  <i>Chair: Steve Ruuth</i>	CAB 235
16:45	17:10	<b>A new approach for solving incompressible 2D Euler's equations</b> Jean-Christophe Nave		
17:10	17:35	<b>Computational approaches to a model problem of two phase flow in porous media with phase change</b> Brian Wetton		
17:35	18:00	<b>On the long term stability of conservative methods</b> Andy Wan		
18:00	19:00	<b>Public Lecture: Michael Bowling (CCIS L2-200)</b> Games and Intelligence of the Artificial Kind  Chair: Thomas Hillen		

Start Time	End Time	MONDAY (B)	
07:30	08:00	Registration (CCIS L2-200)	
08:00	08:15	Opening Ceremony	
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> Ripples on icicles Chair: Rouslan Krechetnikov	
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Chair: Pauline van den Driessche	
09:55	10:30	Coffee Break	
10:30	11:20	<b>Joint Plenary Talk with the Summer CMS Meeting</b> A. Bertozzi (ED N2-115)	
		Title & Author	
		Room Number	
		Session Title: B1	<i>Recent Advances in Dynamical Systems and  Mathematical Biology</i> Chair: Huaiping Zhu
			CAB 239
11:20	12:10	Lessons from dynamical systems for mathematical ecology <b>Alan Hastings (keynote talk)</b>	
12:10	12:35	Effect of space on the stochastic phase of an epidemic Julien Arino	
11:20	12:35	Jupyter Workshop, joint with CMS (CAB 269)	
12:35	14:00	Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)	
13:30	14:30	Joint CMS/CAIMS NSERC Information Session (CAB 239)	
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi	
14:50	15:20	Coffee Break	
15:20	15:45	Using mathematics to understand, treat and avoid hematological disease Michael Mackey	
15:45	16:10	Bifurcations in delayed models of blood cell regulation Jacques Belair	
16:10	16:35	Turing instability and Hopf bifurcation: spatio-temporal dynamics Shigui Ruan	
16:35	16:45	Break	
16:45	17:35	Genetic consequences of range expansion under climate change <b>Mark Lewis (keynote talk)</b>	
17:35	18:00	On competition of species with different diffusion strategies Elena Braverman	
18:00	19:00	<b>Public Lecture: Michael Bowling (CCIS L2-200)</b> Games and Intelligence of the Artificial Kind Chair: Thomas Hillen	

Start Time	End Time	MONDAY ©	
07:30	08:00	Registration (CCIS L2-200)	
08:00	08:15	Opening Ceremony	
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> <b>Ripples on icicles</b> Chair: Rouslan Krechetnikov	
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Chair: Pauline van den Driessche	
09:55	10:30	Coffee Break	
10:30	11:20	<b>Joint Plenary Talk with the Summer CMS Meeting</b> A. Bertozzi (ED N2-115)	
		Title & Author	
		Room Number	
		Session Title: C1	<b>Mathematics of Renewable and Conventional Energy</b>  Chair: Richard Karsten
			CAB 243
11:20	11:45	<b>Signal regularization using dynamics of tree-like structures</b> Vakhtang Putkaradze	
11:45	12:10	<b>Understanding the vertical structure of strong tidal flow</b> Richard Karsten	
12:10	12:35	<b>Global sensitivity analysis of complex hydrocarbon reservoir models and dealing with the curse of dimensionality</b> Ali Karami	
11:20	12:35	Jupyter Workshop, joint with CMS (CAB 269)	
12:35	14:00	Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)	
13:30	14:30	Joint CMS/CAIMS NSERC Information Session (CAB 239)	
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi	
14:50	15:20	Coffee Break	
		Session Title C2	<b>Financial Modelling, Risk Management and Computational Methods</b>  Chairs: Cody Hyndman and Adam Metzler
			CAB 243
15:20	15:45	<b>Importance sampling for portfolio loss probabilities under conditional independence</b> Adam Metzler	
15:45	16:10	<b>Non-affine GARCH option pricing models, variance dependent kernels, and diffusion limits</b> Alex Badescu	
16:10	16:35	<b>Trading against disorderly liquidation of a large position under asymmetric information and market impact</b> Renjie Wang	
16:35	16:45	Break	
16:45	17:10	<b>Issuing a convertible bond with call-spread overlay: Incorporating the effects of convertible arbitrage</b> Cody Hyndman	

17:10	17:35	<b>Swap rates and swaption valuation under GARCH volatility</b> Nat Leung
18:00	19:00	<b>Public Lecture</b> <b>Public Lecture:</b> Michael Bowling (CCIS L2-200) Games and Intelligence of the Artificial Kind Chair: Thomas Hillen

Start Time	End Time	MONDAY (D)	
07:30	08:00	Registration (CCIS L2-200)	
08:00	08:15	Opening Ceremony	
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> Ripples on icicles Chair: Rouslan Krechetnikov	
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Chair: Pauline van den Driessche	
09:55	10:30	Coffee Break	
10:30	11:20	<b>Joint Plenary Talk with the Summer CMS Meeting</b> A. Bertozzi (ED N2-115)	
		Title & Author	
		Room Number	
		Session Title: D1	<b>Network Models for Disease Spread :</b> <i>Chair: Pauline van den Driessche</i>
			CAB 265
11:20	11:45	<b>Disease invasion risks on growing random networks</b> Junling Ma	
11:45	12:10	<b>Disease spread in random spatial networks</b> Joel Miller	
12:10	12:35	<b>Pairwise models for non-Markovian epidemics on networks</b> Istvan Kiss:	
11:20	12:35	<b>Jupyter Workshop, joint with CMS (CAB 269)</b>	
12:35	14:00	<b>Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)</b>	
13:30	14:30	<b>Joint CMS/CAIMS NSERC Information Session (CAB 239)</b>	
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi	
14:50	15:20	Coffee Break	
15:20	15:45	<b>Inferring infection transmission modes and contact networks in a solitary wildlife species</b> Shweta Bansal	
15:45	16:10	<b>Disease spread on a dynamic multi-layer network: applications to Ebola</b> Joe Tien	
16:10	16:35		
16:35	16:45	Break	
18:00	19:00	<b>Public Lecture: Michael Bowling (CCIS L2-200)</b> Games and Intelligence of the Artificial Kind Chair: Thomas Hillen	

Start Time	End Time	MONDAY (E)
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07:30	08:00	Registration (CCIS L2-200)	
08:00	08:15	Opening Ceremony	
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> Ripples on icicles Chair: Rouslan Krechetnikov	
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Chair: Pauline van den Driessche	
09:55	10:30	Coffee Break	
10:30	11:20	<b>Joint Plenary Talk with the Summer CMS Meeting</b> A. Bertozzi (ED N2-115)	
		Title & Author	Room Number
		Session Title: E1	<b>Geophysical Fluid Dynamics</b> <i>Chairs: Michael Waite, Morris Flynn, and Lucy Campbell</i>
11:20	11:45	<b>Gravity current flow in two-layer stratified media</b> Morris Flynn	
11:45	12:10	<b>Nesting nonhydrostatic GCCOM within hydrostatic ROMS for the study of internal gravity wave dynamics</b> Paul Choboter	
12:10	12:35	<b>On the effect of a background shear current on internal wave characteristics in an observation-driven model</b> Caleb Miller	
11:20	12:35	Jupyter Workshop, joint with CMS (CAB 269)	
12:35	14:00	Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)	
13:30	14:30	Joint CMS/CAIMS NSERC Information Session (CAB 239)	
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi	
14:50	15:20	Coffee Break	
15:20	15:45	<b>Modelling uncertainty without an assumed distribution: Turbulent cloud microphysics</b> David Collins	
15:45	16:10	<b>Dependence of atmospheric model energy spectra on vertical resolution</b> Michael Waite	
16:10	16:35	<b>Internal gravity waves and convection generated by a thermal forcing</b> Lucy Campbell	
16:35	16:45	Break	
16:45	17:10	<b>Gravity currents over topography in a two-layer ambient</b> Mitchell Nicholson	
17:10	17:35	<b>A 1-D model for plume flow in two-layer stratified ambient</b> Yongxing Ma	
18:00	19:00	<b>Public Lecture: Michael Bowling (CCIS L2-200)</b> Games and Intelligence of the Artificial Kind Chair: Thomas Hillen	
Start Time		End Time	<b>MONDAY (F)</b>
07:3	08:0	Registration (CCIS L2-200)	

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08:00	08:15	<b>Opening Ceremony</b>	
08:15	09:05	<b>Plenary Talk: Stephen Morris (CCIS L2-200)</b> Ripples on icicles Chair: Rouslan Krechetnikov	
09:05	09:55	<b>CAIMS/PIMS Early Career Award Lecture: J.P. Lessard (CCIS L2-200)</b> Chair: Pauline van den Driessche	
09:55	10:30	Coffee Break	
10:30	11:20	<b>Joint Plenary Talk with the Summer CMS Meeting</b> A. Bertozzi (ED N2-115)	
		Title & Author	Room Number
		Session Title: F1	<i>Mathematical Modelling of Biological Problems</i>  <i>Chair: Stephanie Portet and Emily Evans</i>
11:20	11:45	The contribution of different transmission modes to recurrent epidemics in an avian flu model May Anne Mata	
11:45	12:10	Modelling microtubule dynamics: applications to cancer chemotherapy Diana White	
12:10	12:35	A Mathematical model of collagen lattice contraction Emily Evans	
11:20	12:35	<b>Jupyter Workshop, joint with CMS (CAB 269)</b>	
12:35	14:00	<b>Lunch, Industry Event Panel Discussion, joint with CMS (CAB 235)</b>	
13:30	14:30	<b>Joint CMS/CAIMS NSERC Information Session (CAB 239)</b>	
14:00	14:50	<b>Plenary Talk: Junchen Wei (CCIS L2-200)</b> Stability of large number of spikes in reaction-diffusion systems Chair: Yingfei Yi	
14:50	15:20	Coffee Break	
15:20	15:45	A vector field model of insect wing microstructure arrays Delyle Polet	
15:45	16:10	Transport of intermediate filaments in cells Stephanie Portet	
16:10	16:35	Modeling intermediate filament transport John Dallon	
16:35	16:45	Break	
16:45	17:10	Complex matrix remodeling and directional cell migration emerge from simple mechanically-based rules in agent-based models Keith Goch	
17:10	17:35	A Mathematical model of synergy during virus-drug combinations Marianne Waito	

17:35	18:00	<b>Vaccine scares as critical transitions</b> Demetri Pananos
18:00	19:00	<b>Public Lecture: Michael Bowling (CCIS L2-200)</b> Games and Intelligence of the Artificial Kind Chair: Thomas Hillen

Start Time	End Time	<b>TUESDAY (A)</b>	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> From Crawlers to swimmers - mathematical and computational problems in cell motility Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	
		Room Number	
		Session Title: A2	<i>Recent Advances in Scientific Computing</i> <i>Chair: Brian Wetton and Ronald Haynes</i>
10:20	10:45	<b>A predictor-corrector residual based method for a bedload sediment transport</b> Pascal Pouillet	
10:45	11:10	<b>Time-frequency methods for modelling seismic waves</b> Michael Lamoureux	
11:10	11:35	<b>Iterative methods for embedded and hybridizable Discontinuous Galerkin methods</b> Sander Rhebergen	
11:35	12:00	<b>Iterative and parallel solvers for PDE based mesh generation</b> Ronald Haynes	
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> Multi-person stochastic games and related game options Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
15:40	16:05	<b>Some mathematical and computational methods in relativistic quantum dynamics (for pair production)</b> Emmanuel Lorin	
16:05	16:30	<b>Solving variational problems that map between manifolds via the closest point method</b> Steven Ruuth	
16:30	16:55	<b>Accurate simulation of phase change problems with convection</b> Youssef Belhamadia	
16:55	17:20	<b>A finite element approximation for skeletal muscle tissues</b> Sebastian Dominguez	
17:20	17:45	<b>Anisotropic residual space-time adaptation: applications to cardiac electrophysiology</b> Edward Boey	
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	TUESDAY (B)	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> <b>From Crawlers to swimmers - mathematical and computational problems in cell motility</b> Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	Room Number
		Session Title: B1	<b><i>Recent Advances in Dynamical Systems and            Mathematical Biology</i></b> <b><i>Chair: Alan Hastings and Jim Cushing</i></b> CAB 239
10:20	11:10	<b>Some population dynamic models used to investigate effects of climate change on life history strategies</b> <b>Jim Cushing (keynote talk)</b>	
11:10	11:35	<b>Symmetry and bifurcations in first-order hyperbolic PDEs with nonlocal terms modelling animal aggregation</b> Pietro-Luciano Buono	
11:35	12:00	<b>Bifurcations of slow-fast dynamics in predator-prey systems with Holling types of functional response</b> Renato Huzak	
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> <b>Multi-person stochastic games and related game options</b> Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
15:40	16:05	<b>Limit threshold theorems for a stochastic epidemic model</b> Michael Li	
16:05	16:30	<b>A final size relation for a vector-host epidemic model</b> Fred Brauer	
16:30	16:55	<b>A new algorithm to recover the time dependent transmission coefficient from infection data</b> Hao Wang	
16:55	17:20	<b>Dynamics of disease transmission with media impact, psychological effect and limited health resources</b> Chunhua Shan	
17:20	17:45		
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	<b>TUESDAY ©</b>	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> <b>From Crawlers to swimmers - mathematical and computational problems in cell motility</b> Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	Room Number
		Session Title: C3	<i>Stochastic Modelling in Energy Market:</i>  <i>Chair: Anatoliy Swishchuk</i>
10:20	10:45	<b>Modelling price impact in a corn ethanol oligopoly</b> Matt Davison	
10:45	11:10	<b>Capacity expansion games between asymmetric producers with stochastic relative costs</b> Liangchen Li	
11:10	11:35	<b>Polynomial-preserving processes for power prices</b> Tony Ware	
11:35	12:00	<b>Stochastic correlation in energy markets</b> Luis Seco	
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> <b>Multi-person stochastic games and related game options</b> Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
15:40	16:05	<b>Short-term hedging for an electricity retailer</b> Frederic Godin	
16:05	16:30	<b>Stochastic modelling and pricing of energy contracts with local stochastic delay and jump Volatilities</b> Anatoliy Swishchuk	
16:30	16:55		
16:55	17:20		
17:20	17:45		
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	<b>TUESDAY (D)</b>	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> <b>From Crawlers to swimmers - mathematical and computational problems in cell motility</b> Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	Room Number
		Session Title: D3 <i>Non-local models in Mathematical Biology</i> Chair: Diana White	CAB 265
10:20	10:40	<b>Observing the evolution of phenotype-structured cancer cell populations through a mathematical lens</b> Tommaso Lorenzi	
10:40	11:00	<b>Non-local models for forest fire spread</b> Thomas Hillen	
11:00	11:20	<b>A space-jump derivation for non-local models of cell-cell adhesion</b> Andreas Buttenschoen	
11:20	11:40	<b>Validation of a partial differential equation model for glioma spread</b> Amanda Swan	
11:40	12:00		
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> <b>Multi-person stochastic games and related game options</b> Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
		Session Title: D4 <i>PDEs in Math Biology and Social Interaction</i> Chair: David Iron	CAB 265
15:40	16:05	<b>Synchronized oscillatory dynamics for a 1-D model of membrane kinetics coupled by linear bulk diffusion</b> Michael Ward	
16:05	16:30	<b>Mixing and separation for two-species aggregation model</b> Theodore Kolokolnikov	
16:30	16:55	<b>Reaction-diffusion patterns in plant tip morphogenesis: delayed bifurcation in a slowly changing domain</b> Wayne Nagata	
16:55	17:20	<b>Effect of patrolling police on crime hotspots</b> Wang-Hung Tse	
17:20	17:45		
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	<b>TUESDAY (E)</b>	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> <b>From Crawlers to swimmers - mathematical and computational problems in cell motility</b> Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	
		Session Title: E2 <i>Modern Developments in Thermodynamics</i> Chair: Janet Elliott	Room Number CAB 273
10:20	10:45	<b>Insights into the thermodynamics of Amyloid fibrils.</b> Cristiano Dias	
10:45	11:10	<b>A general Le Chatelier principle for dummies</b> William Smith	
11:10	11:35	<b>Thermodynamics of a multicomponent mixture with a curved interface between the vapor and liquid phases</b> Shardt Nadia	
11:35	12:00	<b>Analytical proof that the Maxwell-Boltzmann collision frequency is not affected by confinement or curvature</b> Brett Carnio	
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> <b>Multi-person stochastic games and related game options</b> Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
		Session Title: E3	<i>Links between Turbulence Theory and Numerical Simulation</i> Chair: John Bowman
15:40	16:05	<b>Regularity criteria of 3D Navier-Stokes Equations involving the pressure term</b> Xinwei Yu	
16:05	16:30	<b>Clebsch representation of the vector potential for 3D incompressible flow</b> Pedram Emami	
16:30	16:55	<b>Using partial Fourier transforms to study Kolmogorov's inertial-range flux</b> John Bowman	
16:55	17:20		
17:20	17:45		
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	<b>TUESDAY (F)</b>	
09:00	09:50	<b>Plenary Talk: Hans Othmer (CCIS L2-200)</b> From Crawlers to swimmers - mathematical and computational problems in cell motility Chair: Thomas Hillen	
09:50	10:20	Coffee Break	
		Title & Author	Room Number
		Session Title: F2	<i>Exact and Approximate Solutions of Gas/Fluid Dynamics equations</i> Chair: Alexei Cheviakov
10:20	10:45	<b>Symmetries and conservation laws in MHD</b> Stephen Anco	
10:45	11:10		
11:10	11:35	<b>Exact solutions of a fully nonlinear two-fluid model</b> Alexei Cheviakov	
11:35	12:00	<b>Time-dependent helical coordinates: derivation of the fundamental system and new conservation laws</b> Dominik Dierkes	
12:00	13:30	<b>Lunch, AGM (CCIS L2-200)</b>	
13:30	14:20	<b>Plenary Talk: Marek Rutkowski (CCIS L2-200)</b> Multi-person stochastic games and related game options Chair: Christoph Frei	
14:20	15:10	<b>CAIMS—Fields Industrial Mathematics Prize - Huaxiong Huang (CCIS L2-200)</b> Chair: Raymond Spiteri	
15:10	15:40	Coffee Break	
		Session Title: F3	<i>Numerical Modelling and Inverse Problems</i> Chair: Jahrul Alam
15:40	16:05	<b>A Bayesian approach for energy-based estimation of acoustic aberrations in high intensity focused ultrasound treatment</b> Bamdad Hosseini	
16:05	16:30	<b>A stabilized marching scheme for solving the inverse problem of degenerate diffusion model</b> Hatef Dastour	
16:30	16:55	<b>Lagrangian modeling of lakes, oceans, and atmosphere</b> Patrick Haertel	
16:55	17:20	<b>A Newton-Krylov-Wavelet method for penetrative turbulent convection</b> Jahrul Alam	
17:20	17:45		
18:00	19:30	<b>Poster Session and Reception</b> (PCL Lounge CCIS Building Atrium)	

Start Time	End Time	WEDNESDAY (A)	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	Coffee Break	
		Title & Author	
		Room Number	
		Session Title: A2	<b>Recent Advances in Scientific Computing</b>  <i>Chair: Jean-Christophe Nave</i>
			CAB 235
10:20	10:45	<b>Is there life beyond bases? On numerical approximation with infinite frames</b> Ben Adcock	
10:45	11:10	<b>Expansion of the weak error for a symplectic scheme for stochastic Hamiltonian systems</b> Cristina Anton	
11:10	11:35	<b>High-performance parallel solvers for reservoir simulators on GPUs</b> Bo Yang	
11:35	12:00	<b>Development of a parallel platform for reservoir simulators on supercomputers</b> Hui Liu	
12:00	13:30	Lunch Break	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	Coffee Break	
		Session Title: A3	<b>Recent Developments in Numerical Software</b>  <i>Chair: Ned Nedialkov</i>
			CAB 235
15:40	16:05	<b>Numerical software packages for boundary value ODEs and 1D and 2D PDEs</b> Paul Muir	
16:05	16:30	<b>Implicitly dealiased convolutions on shared-memory and distributed-memory parallel processors</b> John Bowman	
16:30	16:55	<b>Structural analysis of DAEs in Matlab</b> Ned Nedialkov	
16:55	17:20	<b>A performance assessment of IMEX-RK methods on realistic bidomain problems</b> Ray Spiteri	
18:00	21:00	Banquet (Lister Centre)	

Start Time	End Time	WEDNESDAY (B)	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	Coffee Break	
		Title & Author	Room Number
		Session Title: B1	<i>Recent Advances in Dynamical Systems and  Mathematical Biology</i> Chair: Huaiping Zhu
10:20	11:10	<b>Degeneracy, Complexity, and Robustness of Bio-systems</b> <b>Yingfei Yi (keynote talk)</b>	
11:10	11:35	<b>A model of microtubule organization in the presence of motor proteins</b> Gerda de Vries	
11:35	12:00	<b>Intrinsic coupling between pathogen virulence and antibiotic efficacy</b> Matt Scott	
12:00	13:30	Lunch Break	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	Coffee Break	
15:40	16:05	<b>Dynamics of ordinary differential equations that diminish 2-dimensional areas</b> James Muldowney	
16:05	16:30	<b>Lattice symmetry-breaking and meandering spiral waves</b> Victor LeBlanc	
16:30	16:55	<b>Modelling Radicalization</b> Connell McCluskey	
16:55	17:20	<b>A model of anti-angiogenic therapy in cancer treatment</b> Herbert Freedman	
18:00	21:00	Banquet (Lister Centre)	

Start Time	End Time	<b>WEDNESDAY ©</b>	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	<b>Coffee Break</b>	
		Title & Author	Room Number
		Session Title: C4	<b>Models of the Mountain Pine Beetle Epidemic</b> Chair: Rebeca Tyson
10:20	10:45	<b>Spatiotemporal insect epidemic modeling: Predicting outbreak severity in a changing climate</b> Jacob Duncan	
10:45	11:10	<b>Transient behaviour and boom-bust dynamics in mountain pine beetle populations</b> Devin Goodsmann	
11:10	11:35	<b>Modelling the spread of the mountain pine beetle in an urban environment</b> Rebecca Tyson	
11:35	12:00	<b>Modelling the resilience of resource-based social-ecological networks under large-scale disturbances</b> Matthias Bass	
12:00	13:30	<b>Lunch Break</b>	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	<b>Coffee Break</b>	
		Session Title: C5	<i>Bringing Mathematical Solutions to the Engineering Drafting Table</i> Chair: <i>Patricio Mendez</i>
15:40	16:05	<b>A promising approach to bridge engineering design expressions and their fundamental physics</b> Patricio Mendez	
16:05	16:30	<b>Characteristic values of a moving point heat source in steady state in a semi-infinite solid</b> Ying Wang	
16:30	16:55	<b>Scaling analysis of maximum temperature under a moving Gaussian heat source</b> Yi Lu	
16:55	17:20		
18:00	21:00	<b>Banquet (Lister Centre)</b>	

Start Time	End Time	<b>WEDNESDAY (D)</b>	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	<b>Coffee Break</b>	
		Title & Author	
		Room Number	
		Session Title: D4	<b><i>PDEs in Math Biology and Social Interaction</i></b>  <b><i>Chair: Theodore Kolokolnikov and Michael Ward</i></b>
10:20	10:45	<b>Simple numerical reaction-diffusion with bulk-surface coupling</b> Colin Macdonald	
10:45	11:10	<b>A model of cell surface receptor aggregation</b> David Iron	
11:10	11:35	<b>Optimizing first passage times on a unit disk with mobile traps</b> Justin Tzou	
11:35	12:00	<b>Boundary-contact problems of elasto-diffusion models of tumor - tissues</b> Manana Chumburidze	
12:00	13:30	<b>Lunch Break</b>	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	<b>Coffee Break</b>	
15:40	16:05	<b>Complex dynamics and patterns arising from a coupled model of bulk diffusion and surface reaction</b> Frederic Paquin-Lefebvre	
16:05	16:30	<b>Asymptotic analysis of quorum-sensing behavior for a coupled cell bulk-diffusion model in 2-D</b> Jia Gou	
16:30	16:55	<b>An age-structured model of honey bee dynamics</b> Matthew Betti	
16:55	17:20		
18:00	21:00	<b>Banquet (Lister Centre)</b>	

Start Time	End Time	WEDNESDAY (E)	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	Coffee Break	
		Title & Author <span style="float: right;">Room Number</span>	
		Session Title: E4	<b><i>Advanced Discrretizations and Solvers for Magnetohydrodynamics</i></b> Chair: Scott MacLachlan CAB 273
10:20	10:45	Multi-fluid magnetohydrodynamic models for partially-ionized non-equilibrium anisotropic plasmas Clinton Groth	
10:45	11:10	A high-order finite-volume method with anisotropic AMR for ideal MHD flows on cubed-sphere grids Lucie Freret	
11:10	11:35	Block preconditioners for an Incompressible magnetohydrodynamics problem Michael Wathen	
11:35	12:00	Monolithic multigrid for a B-field incompressible, resistive magnetohydrodynamics model Scott MacLachlan	
12:00	13:30	Lunch Break	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	Coffee Break	
		Session Title: E5	<b><i>Numerical Modelling of Cardio Electromechanical Activity</i></b> Chair: Yussef Belhamadia CAB 273
15:40	16:05	<b>Higher-order operator splitting methods for the bidomain model</b> Raymond Spiteri	
16:05	16:30	<b>Numerical methods for parameter identification of cardiac electrophysiology models</b> Yves Bourgault	
16:30	16:55	<b>Study of cardiac mechano-electrical feedback for controlling cardiac alternans</b> Azzam Hazim	
16:55	17:20		
18:00	21:00	Banquet (Lister Centre)	

Start Time	End Time	<b>WEDNESDAY (F)</b>	
09:00	09:50	<b>Plenary Talk: Mary Wheeler (CCIS L2-200)</b> Phase-field modeling of proppant-filled fractures in a poroelastic medium Chair: Peter Minev	
09:50	10:20	Coffee Break	
		Title & Author	
		Session Title: F4	<b><i>Modelling of In-situ Oil and Gas Extraction</i></b> Chair: Alireza Nouri
			Room Number CAB 281
10:20	10:40	<b>Enhanced flow analysis in tight reservoir with natural and hydraulic fractures using the mixed finite element method</b> Pedro Mateo	
10:40	11:00	<b>On the hydro-thermo-mechanical simulation of Steam Assisted Gravity Drainage (SAGD) operations</b> Alireza Nouri	
11:00	11:20	<b>Probing interaction mechanism of emulsions with asphaltenes in oil production via direct force measurement using drop probe AFM and theoretical model</b> Chen Shi	
11:20	11:40	<b>Probing the fouling mechanism on pipe liner slot in oil production by direct force measurements</b> Lu Gong	
11:40	12:00	<b>Improved solvents for CO2 capture by molecular simulation methodology</b> William Smith	
12:00	13:30	Lunch Break	
13:30	14:20	<b>CAIMS Research Prize Lecture - Leah Edelstein-Keshet (CCIS L2-200)</b> Pattern formation in living cells Chair: Gerda de Vries	
14:20	15:10	<b>Plenary Talk: Zhangxing Chen (CCIS L2-200)</b> <b>Math in oil recovery</b> Chair: Morris Flynn	
15:10	15:40	Coffee Break	
		Session Title: F5	<b><i>Buoyant convection and porous media flows with application to oil/gas</i></b> Chair: Morris Flynn
			Room Number CAB 281
15:40	16:05	<b>Filling box flows in porous media</b> Chunendra Sahu	
16:05	16:30	<b>Transient buoyant convection from a discrete source in a leaky porous medium</b> Ali Moradi	
16:30	16:55	<b>Approximating flows of yield stress fluids along rough channels</b> Ian Frigaard	
16:55	17:20	<b>Thermal plumes in viscoplastic fluids</b> Ida Karimfazli	
18:00	21:00	Banquet (Lister Centre)	

Start Time	End Time	Thursday (A)	
09:00	09:50	<b>CAIMS Research Prize Lecture - Thomas Hillen (CCIS L2-200)</b> Navigating the flow: The homing of sea turtles Chair: Hans Othmer	
09:50	10:40	<b>Doctoral Dissertation Award Lecture - Eric Foxall (CCIS L2-200)</b> Chair: Greg Lewis	
10:40	11:00	Coffee Break	
		Title & Author	Room Number
		Session Title: A4 <i>Contributed Talks</i> Chair: Christina Anton	CAB 235
11:00	11:25	<b>Slowly decaying oscillatory solutions of KP</b> Ion Bica	
11:25	11:50	<b>Why Huygens saw only anti-phase solutions in his clocks experiment</b> Allan R. Willms	
11:50	12:15	<b>An efficient implementation of a delay-stochastic simulation algorithm</b> Marc Roussel	
12:15	12:40	<b>Practical fifth-order embedded ERK methods without simplifying assumptions</b> Andrew Kroshko	
12:40	13:00	Closing Ceremony	

Start Time	End Time	Thursday (B)
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09:00	09:50	<b>CAIMS Research Prize Lecture - Thomas Hillen (CCIS L2-200)</b> Navigating the flow: The homing of sea turtles Chair: Hans Othmer	
09:50	10:40	<b>Doctoral Dissertation Award Lecture - Eric Foxall (CCIS L2-200)</b> Chair: Greg Lewis	
10:40	11:00	<b>Coffee Break</b>	
		Title & Author	Room Number
		Session Title: B2	<i>Contributed Talks</i> <i>Chair: Morris Flynn</i>
11:00	11:25	<b>CFD modelling of steam injection and outflow control device in SAGD</b> Lei Li	
11:25	11:50	<b>Rotating waves on an infinite two-dimensional lattice of coupled phase equations</b> Jason Bramburger	
11:50	12:15	<b>Persistence conditions and traveling periodic waves for Juveniles-Adults model in heterogeneous landscape</b> Yousef Alqawasmeh	
12:15	12:40	<b>Changing emulsion stability using wettability effect</b> Peichun Amy Tsai	
12:40	13:00	<b>Closing Ceremony</b>	

Start Time	End Time	Thursday ©	
09:00	09:50	<b>CAIMS Research Prize Lecture – Thomas Hillen (CCIS L2-200)</b> Navigating the flow: The homing of sea turtles Chair: Hans Othmer	
09:50	10:40	<b>Doctoral Dissertation Award Lecture – Eric Foxall (CCIS L2-200)</b> Chair: Greg Lewis	
10:40	11:00	Coffee Break	
		Title & Author	Room Number
		Session Title: C6 <i>Contributed Talks</i> Chair: Thomas Hillen	CAB 243
11:00	11:25	<b>Modelling plant tissue growth using dynamical Riemannian geometry</b> Julia Pulwicki	
11:25	11:50	<b>An Avian-only Filippov model incorporating culling of both susceptible and infected birds in combating Avian influenza</b> Nyuk Sian Chong	
11:50	12:15	<b>The stability of a size-structured population model in terms of its equivalent delay system</b> Mona Ghwila	
12:15	12:40	<b>A reaction-diffusion model for secondary effects of radiation on cell survival</b> Oluwole Olobatuyi	
12:40	13:00	Closing Ceremony	

Start Time	End Time	Thursday (E)	
09:00	09:50	<b>CAIMS Research Prize Lecture – Thomas Hillen (CCIS L2-200)</b> Navigating the flow: The homing of sea turtles Chair: Hans Othmer	
09:50	10:40	<b>Doctoral Dissertation Award Lecture – Eric Foxall (CCIS L2-200)</b> Chair: Greg Lewis	
10:40	11:00	Coffee Break	
		Title & Author	Room Number
		Session Title: E6 <i>Contributed Talks CSFD</i> Chair: Ian Frigaard	CAB 281
11:00	11:25	<b>Mathematical modelling of a magnetized target fusion reactor.</b> Michael Lindstrom	
11:25	11:50	<b>Yield limit of symmetric-particle motion in yield-stress fluid</b> Emad Chaparian	
11:50	12:15	<b>Lead acid battery, formation room, ducting design, air treatment.</b> Abdul Alim	
12:15	12:40	<b>Flow of yield stress fluids in enclosures.</b> Ida Karimfazli	
12:40	13:00	Closing Ceremony	

