



PROGRAMME: INFOMM ANNUAL MEETING 2 JULY 2021

Virtual Annual Meeting

9.30-9.45 Arrival

9.45-10.00: Welcome by CDT Directors (Main Auditorium)

10.05-11.40: Student Presentations (Parallel Sessions)

Breakout Room A – chair: Ellen Luckins

- Harry Reynolds (Boston Scientific) : “Mathematical modelling of unsteady flows during ureteroscopy”
- Rahil Sachak-Patwa (Biosensors Beyond Borders): “Modelling and Forecasting the Symptom Dynamics of Influenza”
- Meredith Ellis (Cellestec): “Predictive models of metabolite concentration for organoid expansion in the CXP1 bioreactor”
- Ollie Bond (Tokamak Energy): “Mathematical modelling of flowing liquid metal inside a tokamak fusion reactor”

Breakout Room B – chair: Lingyi Yang

- Giancarlo Antonucci (CCFE): “Parallel-in-time integration for chaotic systems”
- Zhen Shao (NAG): “Sketching techniques for large scale optimisations”
- Giuseppe Ughi (RE|SQ): “Mutual information based Neural Networks' Initialisation”
- Nicolas Boulle (Simula): “Data-driven discovery of physical laws with human understandable deep learning”

Breakout Room C – chair: Ambrose Yim

- Yu Tian (Tesco): “Halo effect and demand transfer in retail”
- John Fitzgerald (Elsevier): “A network analysis of the dynamics of international research”
- Rodrigo Leal-Cervantes (dunnhumby): “Stochastic Block Modelling of Spatial Networks with an Application to Retail Trips”

11.40 – 11.55 Break

11.55-12.10 Student poster videos (Main Auditorium)

Chair: Joel Dyer

- Sophie Abrahams (Boston Scientific): “Modelling laser-induced bubbles in ureteroscopy for kidney stones”
- Anna Berryman (BEIS): “Modelling the labour market: Can we predict occupation transitions?”
- Georgia Brennan (Simula): “Clearance and Alzheimer’s Disease: Mathematically Modelling a Mechanistic Link in the Brain’s Protein Pandemic”
- Markus Dablander (Lhasa): “Using siamese neural networks in computational drug discovery”
- James Harris (BP): “Combustion modelling relevant for predicting knock”
- Deqing Jiang (Alan Turing Institute): “Approximating value functions with single-layer neural networks”
- Brady Metherall (Elkem): “A particle level model for a concept silicon reactor”
- Constantin Puiu (NAG): “Speeding up Second Order Optimization Methods”
- Joe Roberts (Gen 2 Carbon): “Modelling the carding of recycled carbon fibre”



12.15-12.45: Student Posters (Parallel Sessions)

Poster Room A

- Sophie Abrahams (Boston Scientific): "Modelling laser-induced bubbles in ureteroscopy for kidney stones"
- Georgia Brennan (Simula): "Mathematically Modelling Clearance in Alzheimer's Disease; A Mathematical Drug Trial for the UK's Protein Pandemic"

Poster Room B

- James Harris (BP): "Combustion modelling relevant for predicting knock"
- Brady Metherall (Elkem): "A particle level model for a concept silicon reactor"

Poster Room C

- Markus Dablander (Lhasa): "Using siamese neural networks in computational drug discovery"
- Deqing Jiang (Alan Turing Institute): "Approximating value functions with single-layer neural networks"

Poster Room D

- Anna Berryman (BEIS): "Modelling the labour market: Can we predict occupation transitions?"
- Constantin Puiu (NAG): "Nonconvex optimization for machine learning"

Poster Room E

- Joe Roberts (Gen 2 Carbon): "Modelling the carding of recycled carbon fibre"

12.45-13.00: Partner Briefing (Main Auditorium)

12.45 – 14.00 Lunch (GatherTown)

14.00-14.45: Academic Plenary (Main Auditorium)

Professor Terry Lyons: "From rough paths to streamed data"

A short overview of the techniques emerging from rough path theory and their use to describe and extract information from streamed data.

Chaired by: Anna Berryman

14.45-15.00 Break

15.00-16.35: Student Presentations (Parallel Sessions)

Breakout Room A – chair: Rahil Sachak-Patwa

- Ellen Luckins (Elkem): "Chemical reaction and counter-current flow systems in the metallurgy industry"
- Matthew Shirley (Elkem): "Heat exchange between the gases and solid in a silicon furnace"
- Thomas Babb (BP): "Permeability Reduction by Fines Migration During Low Salinity Water Flooding"
- Arkady Wey (Gore): "A network model for filtration"

Breakout Room B – chair: Zhen Shao

- Victor Wang (CME): "Estimating neural SDE constrained by a polytope"
- Christoph Hoepfke ([company redacted]): "Accelerated solution of optimal control problems using deep reinforcement learning"
- Huining Yang (BP): "Bargaining under uncertainty"
- Ambrose Yim (Elsevier): "Estimating Indices of Critical points Without Second Derivatives"

Breakout Room C – chair: Giuseppe Ughi

- James Morrill (Iterex Therapeutics): "Causality in Neural controlled differential equations"
- Joel Dyer (Improbable): "Likelihood-free inference for implicit time series models"
- Alexandru Puiu (Macquarie): "A simulation framework for power markets"
- Lingyi Yang (NATS): "Probabilistic approaches for optimising arrival management in air traffic control"

16.35-16.40: Reddick Prize Ceremony (Main Auditorium)

16.40-16.50: Wrap up by CDT Directors (Main Auditorium)

16.50-18.00 Virtual Drinks (Main Auditorium)