Engineering and Physical Sciences Research Council

InFoMM Industrially Focused Mathematical Modelling

PROGRAMME: INFOMM ANNUAL MEETING 23 June 2023

St Catherine's College, Bernard Sunley Building

9:00-9:45 Arrival, Refreshments, and Registration (Foyer)

9:45 – 10:00: Welcome by CDT Director (Theatre)

10:00-10:30 InFoMM Legacy (Theatre)

10:30-11:20 Reports from InFoMM Postdoctoral Research Associates (Theatre)

Chaired by: James Harris

- Ellen Luckins: Multi-scale free-boundary problems in reactive decontamination and filtration
- Matthew Shirley: Modelling the collapse of structured viscous tubes

11:20-11:50 Refreshment Break

11:50-12:40 Student Presentations (Parallel Sessions)

Theatre – chair: Sophie Abrahams

- Georgia Brennan: Dynamic, data-driven neurodegeneration: Clearance and proteopathy in Alzheimer's disease
- Brady Metherall: A Multiphase Model for Silicon Carbide Production

Room A – chair: Joe Roberts

- James Harris: A mathematical model for autoignition
- Oliver Bond: Mathematical modelling of liquid metal inside a tokamak fusion reactor

Room C – chair: Constantin Puiu

- Markus Dablander: Exploring twin neural networks for activity cliff prediction in chemical space
- Deqing Jiang: The magic of large models for solving PDEs

12:45-14:00 Lunch (Hall)

14:00-14:50: Student Presentations (Parallel Sessions)

Theatre – chair: Georgia Brennan

- Sophie Abrahams: Modelling spherical and axisymmetric vapour bubbles arising in the treatment of kidney stones
- Nicholas Ryan: Surface-tension-driven buckling of a viscous disc

Room A – chair: Brady Metherall

- Joe Roberts: Modelling the Breakup of Recycled Carbon Fibre Tows in the Carding Machine
- Torin Fastnedge: Mathematical modelling of microfibre shedding and filtration in washing machines

Room C – chair: Oliver Bond

- Constantin Puiu: Speeding up K-FAC with r-NLA
- Anna Berryman: Measuring labour mobility frictions of the green transition in Brazil

14:50-15:30 Rapid Reports from recent leavers (Parallel Sessions)

Theatre – chair: Ellen Luckins

- Nicolas Boullé: Data-efficient PDE learning
- Meredith Ellis: Understanding and mitigating exposure to chemical and biological materials in enclosed spaces
- John Fitzgerald: Predicting unplanned admissions for patients to enable preventative care
- Yu Tian: More in network science: negative connections, clustering, and quantum aspects

Room C – chair: Matthew Shirley

- Alexandru Puiu: *Title to be confirmed*
- Joel Dyer: AI for Agent-based Modelling
- Christoph Hoeppke: Becoming a Quant Strat - Mathematical modelling for bonds and mortgages
- Raquel Gonzalaz Farina: An update on my journey in Mathematics

15:30-16:00 Refreshment Break

16:00-16:15: Christopher Reddick Prize Ceremony (Theatre)

16:15-17:15 The Reddick Lecture (Theatre)

Professor Pete Grindrod CBE - Mathematics: underpinning innovation and creating value

Chaired by: Markus Dablander

17:15-17:30: Wrap up by CDT Director (Theatre)

17:30-18:30: Drinks Reception (JCR Lounge)

18:30 Dinner (Hall)