

Tuesday 28 November	
5.00-7.00	Registration [Foyer 303-B00L1]
7.00-8.00	Welcome Reception [Foyer 303-B00L1]
Wednesday 29 November	
9.00-9.15	Mihi (introduced by Richard Clarke, Conference Director) [SLT1 (303-G01)]
9.15-10.15	Dr Graham Weir (introduced by Alys Clark) [SLT1 (303-G01)]
	[303-B09] [303-B11]
Chairperson	Richard Clarke Haribalan Kumar
10.20-10.40	Valerie Chopovda* Using magnets for particle extraction from powder flow Alona Ben-Tal The physiological effects of Nasal High Flow
10.40-11:00	Rose Davies A mathematical model of force feed-back on the control of a low-cost flight simulator Sibylle Van Hove* Effects of Outflow Boundary Conditions on Airway CO2 Transport during NHF therapy
11.00-11.30	Morning tea [Foyer 303-B00L1]
Chairperson	Mark Nelson Igor Boglaev
11.30-11.50	Winston Sweatman Pollutant transport in natural aquifers Bishnu Lamichhane A New Minimisation Principle for Poisson Equation Leading to a Flexible Finite Element Approach
11.50-12.10	Jane Holt* Numerical Modelling of a Steam Methane Reformer Russell Edson Couple periodic patches to simulate Kuramoto-Sivashinsky dynamics
12.10-12.30	Mathieu Sellier How valid is Taylor dispersion formula in droplets? Chun Meng Goh* A Stabilised Equal-Order Mixed Meshfree Method for Incompressible Hyperelasticity
12.30-1.30	Lunch [Foyer 303-B00L1]
1.30-2.30	Associate Professor Caroline Yoon (introduced by Richard Clarke) [SLT1 (303-G01)]
Chairperson	Rose Davies Richard Clarke
2.35-2.55	Stephen Woodcock Sdrawkcab scitamehtam: The case for understanding mathematics backwards Tharanga Jayathungage Don* Investigations of lymphatic drainage from the interstitial space
2.55-3.15	Yin-Ying Fang* Feature identification using acoustic signature of Ocean Researcher III (ORIII) Win Min Tun* Predicting the fetal heart response to placental insufficiency in growth restricted pregnancies using a computational model of feto-placental circulation
3.15-3.40	Afternoon tea [Foyer 303-B00L1]
Chairperson	Mark McGuinness Alys Clark
3.40-4.00	Bronwyn Hajek Analytic solutions for nonlinear Arrhenius reaction-diffusion Graeme Wake A dynamical systems model to combat red pine needle disease for the timber industry
4.00-4.20	James Cavallo* Stochastic Modelling of Diffusion-Limited Chemical Reaction Systems David Harman* Using generalised polynomial chaos as a predictive tool during an epidemic
4:20-4:40	Michael Gravatt* Cell-cell hydrodynamic interaction in active suspensions
4.45-5.15	AGM [303-B09]

*Student talk

Thursday 30 November		
9.00-10.00	Professor Philippa Martin (introduced by Alys Clark) [SLT1 (303-G01)]	
	[303-B09]	[303-B11]
Chairperson	Andreas-Kempa Liehr	Alys Clark
10.05-10.25	Ali Al-Hasani* Algorithm for Biobjective Mixed Integer Programming Problem: Improvement for the Triangle Splitting Method	Abdallah Hasaballa* Quantifying the Morphology of the Collagen Network in the Heart
10.25-10.45	Dinesh Rao A nonlinear programming problem of calibration of design weights in stratified Sampling	Yuwen Zhang* Quantitative analysis of idiopathic pulmonary fibrosis abnormality from CT imaging
10.45-11.20	Morning tea [Foyer 303-B00L1]	
Chairperson	Stephen Woodcock	Alona Ben-Tal
11.20-11.40	Haniffa Mohamed Nasir Algebraic construction of higher order difference approximations for fractional derivatives and applications	Haribalan Kumar How to study the effect of surgery on physical variables in a human sinus?
11.40-12.00	Igor Boglaev Monotone ADI scheme for systems of nonlinear integro-parabolic equations and applications	Anand Rampadarath* A Distribution-Moment Approximation for Coupled Airway Dynamics of the Airway Wall and Airway Smooth Muscle
12.00-12.20		Amir Rastar* A comprehensive gas transport model for relating inert gas mixing to forced expiration in the respiratory system
12.30-1.30	Lunch [Foyer 303-B00L1]	
1.30-2.30	Dr Louise Olsen-Kettle (introduced by Richard Clarke) [SLT1 (303-G01)]	
Chairperson	Bishnu Lamichane	Haribalan Kumar
2.35-2.55	Iman Ardekani* Bayesian Approximation Error Approach for Solving Inverse Problems in Elastic Wave Propagation in Basic Structural Elements	Zay Yar Win* Modelling respiratory system mechanics in mechanically ventilated patients
2.55-3.15	Muhammad Ilyas* A three-field formulation of the Poisson problem with Nitsche approach	Luca Parisi* A Novel in Silico Quantification of the Effect of Postural Variation on Chest Wall Shape and Local Tissue Deformation in Healthy Human Lung
3.15-3.40	Afternoon tea [Foyer 303-B00L1]	
Chairperson	Louise Olsen-Kettle	Graeme Wake
3.40-4.00	Hooman Zarreh* Generalized Derivative Operator and its Application in Fracture Mechanics	Zaidi Faheem* Optimal amplitude and frequency of breathing
4.00-4.20	Mark McGuinness Steaming Surtseyan Bombs	Fatima Ansarizadeh* Effects of diffusion on tumor regression in exposure to electromagnetic waves
6.30 onwards	Conference dinner [FALE PASIFIKA]	

*Student talk

Friday 1 December

9.00-10.00	Dr Michael Forbes (introduced by Alys Clark) [SLT1 (303-G01)]	
	[303-B09]	[303-B11]
Chairperson	Dinesh Rao	Winston Sweatman
10.00-10.20	Andreas Kempa-Liehr Balancing Small Samples and Big Data - Time Series Feature Extraction for Industrial Applications	Mark Nelson Analysis of nitrogen removal in the activated sludge process
10.20-10.40	Emmanuel Addo* A comparison of Gaussian, skew student-t and vine copulas for multivariate and spatial distribution modelling of physical measurements along a down-the-hole rock drill core.	Kung-Yeng Lee The correlation between the capacity fade of LiFePO ₄ batteries and cycle life
10.40-11.00	Stephen Woodcock Data Assimilation Methods for Dynamic Modelling of Australian Seagrass Meadows	Ikha Magdalena Asymptotic Expansion and Numerical Simulation for Gravity Waves in a Porous Media
11.00-11.30	Morning tea [Foyer 303-B00L1]	
Chairperson	Graham Wier	Bronwyn Hayek
11.30-11.50	Jeongwhan Choi Forced Gravity-Capillary Surface Waves - Critical Surface Tension	Alison Schroeder* Computational Modelling of Cardiac Trabecula Mechanics
11.50-12.10	Nawin Raj Helical solitons in the string model of classical particles	Tet Chuan Lee* Modelling the Endothelial Glycocalyx Layer in the Microcirculation using Homogenisation
12:10-12:30	Richard Clarke Photofocussing of swimming bacteria	Hashem Yousefi* Shape Matching on the Surface Mesh of the Developing Mouse Heart
12:30-12:50	Yoshioka Hidekazu An Exactly Solvable Stochastic Control Model for Gradual and Radical Animal Migration	Alys Clark Mathematical models to predict the impact of heterogeneity in uterine and placental structure on blood flow dynamics
12.50-2.00	Lunch [Foyer 303-B00L1]	
2.00-4.00	MATLAB workshop [401-311 and 401-312]	

*Student talk