Insigneo Showcase Programme Friday, 8 July 2022

08:30 **Arrival, registration, and refreshments**
An opportunity to network, browse the poster presentations, and visit the Exhibition Area

09:00 **Welcome from Professor Jim Wild –Executive Director of Insigneo, University of Sheffield and Professor Sue Hartley, Vice-President for Research, University of Sheffield**

09:10 **Keynote Speaker: Professor Paul Dimitri, Professor of Child Health and Consultant in Paediatric Endocrinology Sheffield Children's Hospital** 'Transforming Child Health through Technology'

09:20 **Session 1 - Healthcare data/AI**
Chairs: Professor Tim Chico, Professor of Cardiovascular Medicine and Dr Haiping Lu, University of Sheffield, Senior Lecturer in Machine Learning and AI Strategy Lead, University of Sheffield

Dr Susheel Varma, Head of AI & Data Science, Information Commissioner's Office (prev. CTO HDR UK)
'Seeing a responsible FOREST through the TREs'
Professor Suzanne Mason: Professor of Emergency Medicine, ScHARR
'Using Big Data for research: Insights from Emergency Care Systems'
Professor Li Su, Professor of Neuroimaging, University of Sheffield and University of Cambridge
'Integrating AI and neuroimaging with neurobiologically plausible cognitive modelling'
Dr Haiping Lu, Senior Lecturer in Machine Learning, University of Sheffield
'AI Strategy and Turing Network Development'
Dr Samer Alabed, Cardiac MRI Research Fellow in Artificial Intelligence, University of Sheffield
'Quality of reporting in AI cardiac MRI segmentation'

10:10 **Session 2 - Smart devices and sensors**
Chair: Dr Paul Morris, Senior Clinical Lecturer in Cardiology, University of Sheffield

Dr Alex Rothman, Honorary Consultant Cardiologist, University of Sheffield
'Remote monitoring in patients with pulmonary arterial hypertension'
Professor Sanja Dogramadzi, Professor of Medical Robotics, University of Sheffield
'Motion Capture Pillow for patient pose monitoring during radiotherapy'
David King, Head of Digital Design, Advanced Manufacturing Research Centre
'Industry 4.0 in Health: A Vision for Digital Healthcare'

11:00 **Coffee break**

11:30 **Session 3 - Biomaterials, Biomechanics and Cell Engineering**
Chair: Professor Paul Evans, Professor of Cardiovascular Science, University of Sheffield

Professor Ipsita Roy, Professor of Biomaterials, University of Sheffield
'Natural Biomaterials of Bacterial Origin and their Biomedical Applications'
Professor Craig Murdoch, Professor in Oral Bioscience, University of Sheffield
'Tissue engineered epithelial models to model disease, tissue toxicity, novel treatments and drug delivery'
Dr Ivana Barbaric, Senior Lecturer in Stem Cell Biology, University of Sheffield
'The role of mechanosensing in human pluripotent stem cell fates.'
Dr Annica Gad, Lecturer in Cancer Biology, University of Sheffield
'The mechanical response, contractile forces and motility of fibroblasts in cancer'

12:20 **Lunch - enjoy a break and network or browse the poster presentations**

13:40 **Plenary speaker: Professor Andy Parker, Professor of High Energy Physics, University of Cambridge**
'Collaborating at scale: for decades with a cast of thousands.'

14:20 **Session 4 - Computational Modelling in Medicine,**
Chairs: Dr Enrico Dall'Ara, Senior Lecturer at the Department of Oncology and Metabolism, University of Sheffield and Dr Rebecca Gosling, NIHR Clinical Lecturer, University of Sheffield

Professor Rod Hose, Emeritus Professor, University of Sheffield
'Insigneo and the. Virtual Physiological Human: Opportunity and Achievement.'
Dr Stefaan Verbruggen, Lecturer in Biomechanics, University of Sheffield
'Multi-physics modelling of bone at the cell scale'
Professor Amaka Offiah, Chair of Paediatric Musculoskeletal Imaging and Honorary Consultant Paediatric Radiologist University of Sheffield and Dr Shannon Li, Senior Lecturer, University of Sheffield
'Using VOICES to tell whether this infant's humeral fracture is accident or abuse'
Ning Wang, PhD Student University of Sheffield
'Distinguishing hypertensive renal injury from diabetic nephropathy using MR imaging and computational modelling of renal blood flow'

	Malwina Matella, PhD Student, University of Sheffield	
	'Electrical impedance spectroscopy of thyroid and parathyroid tissue – a computational study'	
15:10	**Coffee Break**	
15:40	**Session 5 – Biomedical Imaging** **Chairs: Dr Alice Pyne, Senior Lecturer in Soft Matter and Polymers University of Sheffield and Professor Ashley Cadby, Professor of Soft Matter Physics, University of Sheffield**	
	Dr Rebecca Gosling- NIHR Clinical Lecturer, University of Sheffield	
	'Comprehensive modelling of myocardial ischaemic burden'	
	Dr Simon Danby- Research Fellow, University of Sheffield	
	'Optical coherence tomography imaging in dermatology'	
	Dr Kyra Campbell- Sir Henry Dale Fellow, University of Sheffield	
	'High resolution imaging of cells moving deep inside whole animals-the Beauty and the Beast'	
16:30	**Closing remarks: Professor Dave Petley, Vice-President for Innovation, University of Sheffield and Professor Damien Lacroix, Insigneo Deputy Director, University of Sheffield**	
17:00	**Join us for an informal social at the University Arms**	

POSTER PRESENTATIONS

1	Omar Elnagger	Sleep Posture Classification: From In-Silico Proof-of-Concept to Validation with Wearable Sensors
2	Michael Sharkey	Fully automatic cardiac and great vessel segmentation on CT pulmonary angiography (CTPA) using deep learning
3	Lula Albar	CONTEXTUAL ADAPTIVE COMMUNICATION AID to Support Individuals with Aphasia in Communication
4	Jack Ashurst	A FLAMEGPU-Based Computational Model of Bone Remodelling and Multiple Myeloma
5	Hannes Saal	Imaging dynamic sub-surface skin strain patterns during tactile exploration
6	Aniebiet Macaulay	Development of a Finger Model to Assess Human and Robotic Grasping Interactions
7	XUAN WANG	Understanding Interactions with Human Intestinal Tissue for Capsule Endoscopy
8	Ning Wang	Distinguishing hypertensive renal injury from diabetic nephropathy using MR imaging and computational modelling of renal blood flow
9	Alex Stihi	Detection of anomalies in the gait of people affected by multiple sclerosis
10	Eloïse V. Briggs	Effect of unilateral-dominant lameness on breakover duration during equine walk
11	William Henson	AUTOMATIC MUSCLE SEGMENTATION WITH DEFORMABLE IMAGE REGISTRATION FROM MRI IMAGES OF HUMAN LOWER LIMBS
12	Michail Mamalakis	Deep learning approaches to classify lung parenchymal disease on CT scans
13	Michail Mamalakis	Deep learning networks to detect metastasising cells in high resolution images
14	STAMATINA MORAITI	Principal Component Analysis for elucidating important treatment effects on ovariectomised mice
15	Malwina Matella	Electrical impedance spectroscopy of thyroid and parathyroid tissue – a computational study
16	Vitaveska Lanfranchi	Development and proof of concept of an ELEctronic tool for Clinicians, Teachers and Researchers In Child Abuse: ELECTRICA
17	Saira Farage-O'Reilly	Effect of the loading direction on the predicted local mechanical properties of the mouse tibia
18	Yuyang Liu	Using Machine Learning Techniques and Brain MRI Scans for Detection of Alzheimer's Disease
19	Krit Dwivedi	CT Lung Parenchymal Patterns As Significant Prognostic Imaging Biomarkers In Pulmonary Hypertension With Lung Disease.
20	Ludmila Kucikova	Using computational modelling and neuroimaging to predict recurrent visual hallucinations in neurodegenerative conditions
21	Holly Geraghty	Can we wake up a lazy eye?
22	James Scott	Fundal markers in bone: Does Dentistry have the answers?
23	Samer Alabed	The quality of reporting in cardiac MRI artificial intelligence segmentation studies - a systematic review
24	Terence Egbelo	Towards Predicting Enzyme Activity by Traversing Biomedical Knowledge Graphs
25	Robert Byers	Deep learning networks to predict severity risk in skin disease
26	Marilina Douloudi	An investigation of cortical network hyperexcitability in the ALS SOD1-G93A mouse model using MEA technology