SofTMech^{SET}: EPSRC-funded Research Hub on Statistical Emulation and Uncertainty Quantification in Cardiac Mechanics

Vision: Despite their enormous potential, current mathematical cardiovascular models are far too slow for clinical use due to their computational complexity. SofTMechSET aims to develop novel statistical emulation techniques to make real-time clinical applications of these models feasible, leading to a paradigm-shift in cardiovascular clinical decision on support

Inauguration Event: The event took place on 21 May 2021; minutes can be viewed on this website.

Inauguration Event Programme

Part 1: Overview of current research projects, 15:00 – 16:00

Dirk Husmeier
Overview of the Hub's research remit

Richard Clayton
Calibration and sensitivity analysis in cardiac electrophysiology

Hao Gao
Parameter inference for myocardial constitutive laws based on cardiac magnetic resonance (CMR) images

Yalei Yang
Bayesian hierarchical modelling for lesion detection from CMR scans

Mihaela Paun
Haemodynamic modelling for detecting pulmonary hypertension

Alan Lazarus
Parameter estimation and uncertainty quantification in cardiac mechanics

David Dalton
Graph neural network emulation of cardiac mechanics

Arash Rabbani
Quantification of cardiac endotypes in Covid-19

Part 2: Open discussion about engagement and collaborations, 16:15 – 17:00

The aim of the discussion is to explore opportunities for collaborations and to identify practical first steps to initiate them. Promising ideas emerging from this discussion may be developed into a proposal for a project to be funded by our partnership resource fund.