

PIC Winter School Programme

The 'Digital Twin' to enable the vision of precision cardiology

Times in CET. Teams room (ask organisers for link)

Start	Monday 30 th Nov	Tuesday 1 st Dec	Wednesday 2 nd Dec
09:00	Teresa Collins AstraZeneca	Peter Mortier CTO at FEops	Nathalie Virag Medtronic
09:40	Maciej Marciniak (F1): Computational cardiac anatomy: novel shape biomarkers	Joao Fernandes (F6): Non- invasive estimation of central blood pressure and flow inefficiencies	Francesca Margara (F11): Investigating HCM electro- mechanical pathophysiology using human-based computational and experimental approaches
10:05	Break	Break	Break
10:15	Mehrdad Shahmohammadi (F2): In-silico workbench for sensor acquisition and therapy optimization	Hongxing Luo (F7): Preclinical validation and assessment	Valeria Galli (F8): Optimization of the choice and configuration of valve prosthesis
10:40	Syed Hassaan Ahmed (F3): Cellular electrophysiology from electrical body recordings	Manuel Villegas (F12): Improved control of cardiac pacemakers in heart failure	Jorge Corral (F13): Automated 3D shape analysis of the heart: from 2D CMR to physiological simulations
11:05	Andy Gilbert (F4): Deep learning in cardiovascular ultrasound: Automating measurements, workflow, and data acquisition	Philip Westphal (F9): Personalised HF therapy with motion sensors and simulations	Yingjing Feng (F14): Use of non-invasive mapping to treat atrial arrhythmias
11:30	Break	Break	Break
11:40	Krissy McLeod General Electric	Katerina Spranger CEO at Oxford Heartbeat	Mariano Vázquez CTO at ELEM Biotech
12:20	Ali Wajdan (F5): Cardiac accelerometers	Cristóbal Rodero (F10): Optimisation of activation patterns during next generation CRT pacing	Filip Loncaric (F15): Phenotyping left ventricular hypertrophy based on multimodality imaging and machine learning
12:45	Lunch break	Lunch break	Lunch break
14:00	OpenCARP workshop Introduction to myokit and ionic models. Groups form and decide on specific project. Download CellML model and modify model parameters to get desired behaviour	OpenCARP workshop Convert ionic model to openCARP format. Place model in tissue. Perform tissue simulations (eg: EADs, reentry, DADs and their treatment, alternans). Address project topic	Pras Pathmanathan FDA 14:40 OpenCARP workshop : Finish tissue simulations. 16:00 Make presentation of project 17:00 Workshop awards
17:30	End of day	End of day	End of day