




## MCF2020 – Modelling the Cardiac Function

Theory, Numerical Methods, Clinical Applications

Online event, 31 August - 2 September 2020

	August 31		September 1		September 2	
1:55 p.m. CEST 7:55 a.m. EDT 8:55 p.m. JST	<b>Alfio QUARTERONI</b> Welcome and Introduction to the Conference					
2:00 p.m. CEST 8:00 a.m. EDT 9:00 p.m. JST	PLENARY SESSION		PLENARY SESSION		PLENARY SESSION	
	<b>Seiryu SUGIURA</b> "In Silico Surgery for Congenital Heart Diseases using UT-Heart Simulator"		<b>Francesco MIGLIAVACCA</b> "Transcatheter Valve Implantation and Thrombus Removal: an in Silico Perspective"		<b>Olaf DOESSEL</b> "Bridging the Gap between Cardiac Modeling and Clinical Applications"	
2:40 p.m. CEST 8:40 a.m. EDT 9:40 p.m. JST	PLENARY SESSION		PLENARY SESSION		PLENARY SESSION	
	<b>Edward VIGMOND</b> "Modelling Arrhythmia and the Purkinje System"		<b>Rajat MITTAL</b> "Coupled Multiphysics Models of Cardiac Hemodynamics: from Fundamental Insights to Clinical Translation"		<b>Steven NIEDERER</b> "Delivering the Right Device to the Right Location for the Right Patient: Patient Specific Simulation Guided Cardiac Resynchronisation Therapy"	
3:20 p.m. CEST 9:20 a.m. EDT 10:20 p.m. JST	SESSION A	SESSION B	SESSION A	SESSION B	SESSION A	SESSION B
	<b>Alessandro Barone</b> "Experimental Validation of a Variational Data Assimilation Method for Cardiac Conductivity Estimation"	<b>Elias Karabelas</b> "Incorporating Heart Valves using a Varying Permeability Approach"	<b>Abouzar Kaboudian</b> "Arrhythmogenic Effects in Tissue of Hydroxychloroquine and Azithromycin in the Treatment of COVID-19"	<b>Alessio Gizzi</b> "Orthotropic electro-visco-elastic Computational Modelling of the Heart"	<b>Alessandro Loppini</b> "Thermal Effects and Correlation Analysis on Cardiac Tissue"	<b>Alberto Zingaro</b> "Computational Fluid Dynamics of Blood Flow in the Left Heart"
3:40 p.m. CEST 9:40 a.m. EDT 10:40 p.m. JST	 A coffee with... : <b>Seiryu Sugiura, Edward Vigmond, Natalia Trayanova</b>		 A coffee with... : <b>Francesco Migliavacca, Rajat Mittal, Gernot Plank</b>		 A coffee with... : <b>Pasquale Africa, Olaf Doessel, Steven Niederer, Luca Pavarino</b>	
4:10 p.m. CEST 10:10 a.m. EDT 11:10 p.m. JST	SESSION A	SESSION B	SESSION A	SESSION B	SESSION A	SESSION B
	<b>Lia Gander</b> "The Effect of Shape Uncertainties on the Forward and Inverse Problem of Electrocardiography"	<b>Ekaterina Kovacheva</b> "In-Silico Study on Hypertrophic Cardiomyopathy-Causes of Altered Myocardial Velocities"	<b>Rebecca Belletti</b> "Quantifying the Arrhythmogenicity of two IKr Gain-of-function Mutations in Human Atrial Cells"	<b>Francesco Regazzoni</b> "A Biophysically-detailed Human Cardiomyocytes Model: towards Computationally Efficient Simulations"	<b>Nagaiah Chamakuri</b> "Parallel and Space-time Adaptive Numerical Simulation of 3D Cardiac Electrophysiology"	<b>Charles Puelz</b> "Fluid-structure Interaction Model of the Human Heart"
4:30 p.m. CEST 10:30 a.m. EDT 11:30 p.m. JST	SESSION A	SESSION B	SESSION A	SESSION B	SESSION A	SESSION B
	<b>Yassine Abidi</b> "Estimation of Multiple Ionic Parameters in Multi-scale Cardiac Electrophysiology Modelling"	<b>Ivan Fumagalli</b> "Patient-specific Hemodynamics of the Left Ventricle: an Image-based Computational Pipeline"	<b>Sundeep Singh</b> "Cardiac Tissue Deformation and the Efficacy of Radiofrequency Ablation"	<b>Roberto Piersanti</b> "Modeling Cardiac Muscle Fibers in Ventricular and Atrial Electrophysiology Simulations"	<b>Kamal Sharma</b> "A Detailed Sensitivity Analysis of the OVVR Human Ventricular Model in 1 and 2D Tissue"	<b>Simone di Gregorio</b> "A Stress CT image-based Computational Model for Quantification of Myocardial Blood Flow in Human Heart"
4:50 p.m. CEST 10:50 a.m. EDT 11:50 p.m. JST	SESSION A	SESSION B	SESSION A	SESSION B	SESSION A	SESSION B
	<b>Stefania Fresca</b> "Deep Learning-based Reduced Order Modeling for"	<b>Federica Caforio</b> "A Coupling Strategy for a 3D-1D Cardiovascular Model"	<b>Stefano Pagani</b> "A Numerical Study of the Electrophysiological"	<b>Martin Pfaller</b> "Physiology, Computational Modeling, and Impact of Pericardial Boundary Conditions"	<b>Simone Stella</b> "Computational Estimation of Latest Activation Time in View of the Cardiac"	<b>Nicolas Barnafi</b> "An Integrated Computational Model for Myocardial Perfusion"

	<i>Cardiac Electrophysiology"</i>		<i>Substrate Triggering Arrhythmias"</i>		<i>Resynchronization Therapy"</i>	
5:10 p.m. CEST 11:10 a.m. EDT 00:10 a.m. JST	<b>PLENARY SESSION</b>		<b>PLENARY SESSION</b>		<b>PLENARY SESSION</b>	
	<b>Gernot PLANK</b> <i>"An Automated Workflow for Creating Digital Twins of Cardiac Electrophysiology"</i>		<b>Luca PAVARINO</b> <i>"Scalable solvers for cardiac electro - mechanics and applications to Arrhythmogenesis in LQT8 Syndrome"</i>		<b>Natalia TRAYANOVA</b> <i>"Clinical Applications of Heart Digital Twin Technology"</i>	
5:50 p.m. CEST 11:50 a.m. EDT 00:50 a.m. JST	<i>End</i>		<i>End</i>		<i>End</i>	