

# VII SOFT TISSUE WORKSHOP

Venue: Classroom T13, Campus Leonardo, Politecnico di Milano

Plenary Talk: 35 mins + 5 mins question

Regular Talk: 12 mins + 3 mins questions

DAY 1 WEDNESDAY 11 JUNE 2025			
	08:30	09:15	REGISTRATION <span style="float: right;">at SPAZIO VETRATO (just in front of building 13 where room T13 is located)</span>
	09:20	09:30	Welcome
Morning Session-1 Chair:	<b>THEME: Cerebrovascular Pathology</b>		
	09:30	10:10	Alain Goriely <i>Modelling cerebrovascular pathology and amyloid beta spreading in Alzheimer's disease</i>
	10:10	10:25	Mattia Corti <i>Numerical Modeling of Protein Spreading and brain atrophy in Neurodegeneration</i>
	10:25	10:40	Kuo Jen Feng <i>A Matrix Differential Equation Approach for Strongly Coupled Arterial Blood Flow and Cerebral Tissue Perfusion Simulations</i>
	10:40	10:55	Keefe Manning <i>Mechanical behavior of hyper-calcified cerebral embolus analogs in acute ischemic stroke</i>
	10:55	11:10	Simone Bonfiglio <i>A multiphase model for fluid dynamics in damaged tissue</i>
	11:10	11:40	<b>COFFEE BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>
Morning Session-2 Chair:	<b>THEME: Perfusion &amp; Poroelectricity</b>		
	11:40	11:55	Raimondo Penta <i>Micromechanical analysis of the effective stiffness of poroelastic composites and its application to myocardial infarction</i>
	11:55	12:10	Laura Miller <i>Homogenized modelling of the electro-mechanical behaviour of a vascularized poroelastic composite representing the myocardium</i>
	12:10	12:25	Sumesh Sasidharan <i>Cardiac Response in Acute Viral Myocarditis: A Poroelastic Computational Study of Myocardial Stiffness</i>
	12:25	12:40	Alberto Girelli <i>Multiscale Modelling of Fluid Flow in a Lymph Node ?</i>
	12:40	14:00	<b>LUNCH BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>
Afternoon Session-1 Chair:	<b>THEME: Arteries and Circulation</b>		
	14:00	14:40	Santi Trimarchi <i>Surgery and modelling: a winning marriage</i>
	14:40	14:55	Francesca Duca <i>computational study to assess hemodynamic forces in descending thoracic aortic aneurysm</i>
	14:55	15:10	Letizia Perri <i>In silico models of post-dilatation in TAVI patients</i>
	15:10	15:25	Giulia De Campo <i>How calcifications can impact TEVAR procedures: insights from computational analyses</i>
	15:25	15:40	Luca Crugnola <i>Personalized computational hemodynamics framework to assess the long-term performance of Transcatheter Aortic Valve Implantation</i>
Afternoon Session-2 Chair:	<b>THEME: COFFEE BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>		
	16:10	16:25	Silvia Renon <i>The importance of inelasticity when simulating balloon deployment in diseased arteries</i>
	16:25	16:40	Sathish Kumar Marimuthu <i>Modelling past EVAR vascular adaptations (G&amp;R) and validation</i>
	16:40	16:55	Virginia Fregona <i>How does thrombus composition influence the thrombectomy outcome? An in silico study ?</i>
Poster Session:	<b>POSTER SESSION</b> <span style="float: right;">at SPAZIO VETRATO</span>		
	17:00	18:00	Keichi Takamiyawa <i>Stretch and Stress Distributions in Arterial Wall Based on 3D Riemannian Manifold</i>
			Sidika Mine Toker <i>Effects of Laser Surface Processing on the Biocompatibility of a Potential Biomedical Alloy: High Entropy TiTaHfNbZr Alloy</i>
			Ivan Fumagalli <i>Modeling cerebrospinal fluid dynamics in neurodegenerative diseases</i>
DAY 2 THURSDAY 12TH JUNE			
Morning Session-1 Chair:	<b>THEME: Inference</b>		
	09:00	09:40	Linwei Wang <i>Learn-to-Personalize with Hybrid Models: Theory, Methods, and Applications</i>
	09:40	09:55	Dirk Husmeier <i>Physics-informed machine learning for emulation of the systemic blood flow circulation</i>
	09:55	10:10	Giovanni Montino Pelagi <i>Towards a digital twin for myocardial ischemia: from coronary hemodynamics to cardiac perfusion</i>
	10:10	10:25	Roberto Piersanti <i>Redefining the Fiber Architecture: A Breakthrough in Atrial Digital Twin Modeling</i>
	10:25	10:40	Yuzhang Ge <i>Advanced Statistical Inference of Myocardial Stiffness: A time series Gaussian Process approach of emulating Cardiac Mechanics for real-time clinical decision support</i>
	10:40	11:10	<b>COFFEE BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>
Morning Session-2 Chair:	<b>THEME: Cells &amp; Tissue</b>		
	11:10	11:25	Andrea Tonini <i>Cardiocirculatory model personalization through data-driven approaches and uncertainty quantification</i>
	11:25	11:40	Peter Stewart <i>A theoretical model for focal adhesion and cytoskeleton formation in non-motile cells</i>
	11:40	11:55	Zita Borbala Fulop <i>Multiscale Analysis of Electrically Stimulated Vascularised Tumours: A Patient-Specific Theoretical and Computational Approach</i>
	11:55	12:10	Mariam Almudarra <i>Non-Local Chemical Effects on Avascular Tumour Growth</i>
	12:10	12:25	Malwina Matella <i>Electrical impedance spectroscopy-based oral cancer diagnosis using tissue engineering and computational models</i>
	12:25	12:40	Andrew Brown <i>A multiscale model of material failure and its applications to soft tissue tearing</i>
	12:40	14:00	<b>LUNCH BREAK:</b> <span style="float: right;">at SPAZIO VETRATO</span>
Afternoon Session-1 Chair:	<b>THEME: Eyes</b>		
	14:00	14:40	Jose F Rodriguez Matas <i>On inverse elasticity methods for anisotropic hyperelastic materials</i>
	14:40	14:55	Benedetta Fantaci <i>Keratoconus Growth Model: A 10-Year Case Study</i>
	14:55	15:10	
	15:10	15:25	Damiano Bertolo <i>Stress-relaxation behaviour of the retina characterized through small punch test and computational modelling</i>
	15:25	15:40	Atrayee Bhattacharya <i>Predicting retinal haemorrhage following retinal vein occlusion</i>
	15:40	15:55	Kevin Raul <i>Numerical Simulations of Iris Biomechanics: Modeling Active-Passive Muscle Behavior</i>
	15:55	16:30	<b>COFFEE BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>
Afternoon Session-2 Chair:	<b>THEME: Flow and Polymers</b>		
	16:30	16:45	Danyang Wang <i>Instabilities of collapsible channel flow</i>
	16:45	17:00	Mitchel J. Colebank <i>Simulating pulse-wave hemodynamics under the effects of vasoactivity</i>
	17:00	17:15	Silvia Paparini <i>Shape Instabilities driven by defects with different topological charge in Nematic Polymer Networks</i>
	17:15	17:30	
Public Lecture	18:00	19:00	Alfio Quarteroni <i>Which role for computational scientists in the era of artificial intelligence?</i>
<b>The Conference Dinner will be held at Ristorante La Cuccuma - 20:00</b>			
DAY 3 FRIDAY 13TH JUNE			
Morning Session-1 Chair:	<b>THEME: Heart, Valves &amp; Bladder</b>		
	09:00	09:15	Hao Gao <i>A Modelling Study of Right Ventricular Dynamics with Valvular Regurgitation</i>
	09:15	09:30	Jay MacKenzie <i>A Coupled Bi-Ventricle Flow Model With Explicit Arterial Circulation</i>
	09:30	09:45	Michele Bucelli <i>A partitioned solver for Purkinje-muscle coupling in cardiac electrophysiology</i>
	09:45	10:00	Sarah Donaldson <i>A Physiologically Accurate Active Strain Model for Left Ventricular Contraction</i>
	10:00	10:15	Namshad Thekkethil <i>Patient-Specific Multicompartment Darcy Flow Model: Effect of Heterogeneity and Anisotropy in Porous Parameters</i>
	10:15	10:30	Alessandra Corda <i>Modeling the interplay between acute myocardial ischemia and arrhythmogenesis</i>
	10:30	11:10	<b>COFFEE BREAK</b> <span style="float: right;">at SPAZIO VETRATO</span>
Morning Session-2 Chair:	<b>THEME: Phototransducers</b>		
	11:10	11:25	Radostin Simitev <i>A large population of cell-specific action potential models replicating fluorescence recordings of voltage in rabbit ventricular myocytes</i>
	11:25	11:40	Scott Richardson <i>A first in-silico trial of quantifying the drug effects of SGLT2i in heart failure</i>
	11:40	11:55	Sara Galasso <i>An adapted tensorial decomposition for simplifying constitutive modelling of skeletal muscles</i>
	11:55	12:10	Kieran Boniface <i>Computational modelling of bladder outlet obstruction mechanobiology</i>
	12:10	12:50	Guglielmo Lanzani <i>Intra membrane molecular phototransducers for muscle cell stimulation</i>
	12:50	13:00	Closing Remarks