

## Thursday May 16<sup>th</sup>

08.00 – 08.50 Registration, coffee, poster set-up

08.50 – 09.00 Opening

09.00 – 09.30 Keynote Blanca Rodriguez, University of Oxford, Oxford, United Kingdom

### 09.30 – 10.40 Session Fluid Mechanics and Pathology

09.30 – 09.50 Peter Stone, Harvard Medical School, Boston, USA  
*Widening the Lens for Risk-Stratification of High-Risk Plaques Likely to Cause Future MACE: From Invasive IVUS/OCT to Non-Invasive CCTA*

09.50 – 10.10 Ryan Pedrigi, University of Nebraska, Lincoln, USA  
*Normal Blood Flow plus Atorvastatin Promotes Regression of Unstable Plaques*

10.10 – 10.25 Peter Weinberg, Royal Brompton Hospital, London, United Kingdom  
*Relative Residence Time can account for half of the anatomical variation in fatty streak prevalence within the right coronary artery*

10.25 – 10.40 Diego Gallo, Politecnico di Torino, Turin, Italy  
*Functional and Hemodynamic Assessment in Elderly Patients with Myocardial Infarction and Multivessel Disease. A Longitudinal Study*

10.40 – 11.10 Coffee break

### 11.10 – 12.40 Session Mechanotransduction I

11.10 – 11.30 Suowen Xu, University of Science and Technology of China, Hefei, China  
*Endothelial IGFBP6 Suppresses Vascular Inflammation and Atherosclerosis*

11.30 – 11.50 Young-June Jin, Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany  
*Endothelial protein kinase N1 (PKN1) mediates phosphorylation of histone H3.3 for rapid disturbed flow-induced gene activation*

11.50 – 12.10 Graeme Birdsey, Imperial College London, London, United Kingdom  
*Loss of ERG function contributes to lymphatic vessel malformations and primary lymphoedema*

12.10 – 12.25 Daniela Pirri, Imperial College London and Mary University of London, London, United Kingdom  
*EPAS1 maintains endothelial homeostasis and is atheroprotective via lipid metabolism at sites of disturbed flow.*

12.25 – 12.40 Eulashini Chuntharpursat, University of Leeds, Leeds, United Kingdom  
*Mechanosensing at endothelial cell-cell junctions*

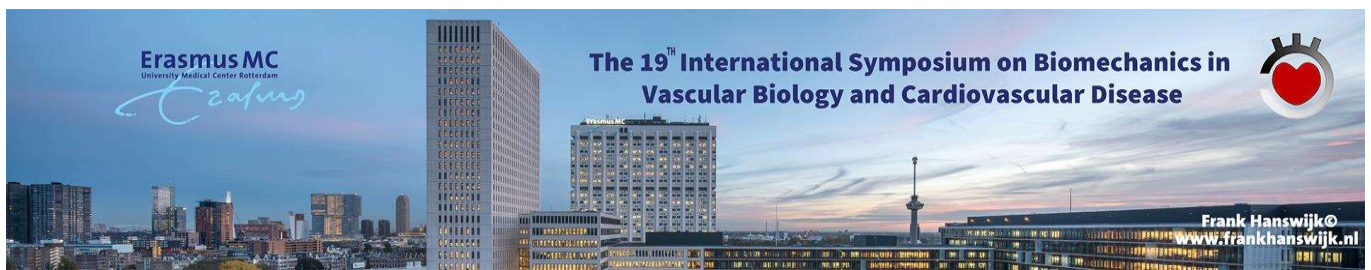
12.40 – 14.00 Lunch - posters

### 14.00 – 15.25 Session Aneurysms

14.00 – 14.20 Philippe Bijlenga, Geneva University Hospital, Genève, Switzerland  
*Navigating the Mist: Unveiling the Mysteries of Intracranial Aneurysm*

14.20 – 14.40 Michela Bozzetto, Mario Negri Institute for Pharmacological Research, Milan, Italy  
*Do Vascular Wall Vibrations Play a Role in Vascular Disease? The Case of Cerebral Aneurysm and Arteriovenous Fistula*

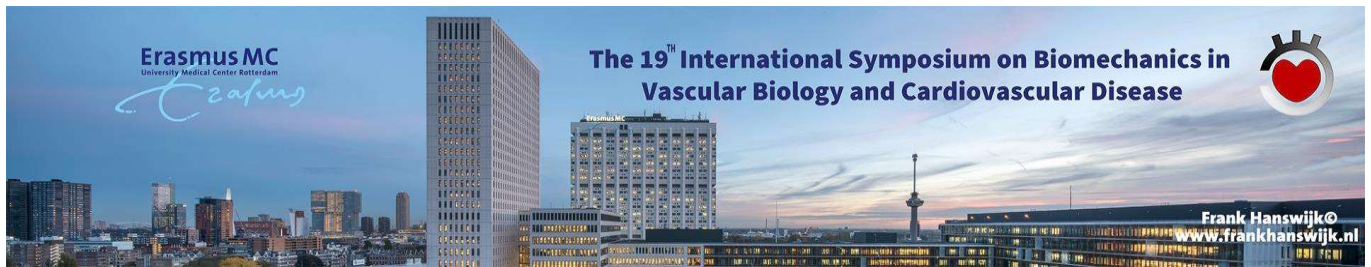
14.40 – 14.55 Mannekomba Diagbouga, University of Geneva, Genève, Switzerland  
*Exploring endothelial dysfunction and mechanical forces in intracranial aneurysm pathogenesis: insights from transcriptomic studies*



- 14.55 – 15.10 Beatrice Bisighini, University of Lyon and University of Jean Monnet, Saint-Etienne, France  
*Coupling finite element and machine learning modelling for the real-time simulation of intracranial aneurysms endovascular treatment*
- 15.10 – 15.25 Janneck Stahl, University of Magdeburg, Magdeburg, Germany  
*Can black blood MRI indicate unstable neurovascular pathologies? A hemodynamic analysis of wall and intraluminal enhancement*
- 15.25 – 16.00 Coffee break - posters
- 16.00 – 17.15 Session Digital twin of (congenital) heart disease**
- 16.00 – 16.20 Wouter Huberts, TU Eindhoven, Eindhoven, the Netherlands  
*An efficient uncertainty and sensitivity analysis approach to direct personalization and assess the credibility of digital human twins*
- 16.20 – 16.40 Nele Famaey, KU Leuven, Leuven, Belgium  
*A multi-scale, multi-physics approach to understand and prevent cardiovascular maladaptation in the Ross procedure*
- 16.40 – 17.00 Arno Roest, Leids Universitair Medisch Centrum, Leiden, the Netherlands  
*The incremental value of computational fluid dynamics (CFD) in single ventricle congenital heart disease*
- 17.00 – 17.15 Sander Schomaker, University of Groningen, Groningen, the Netherlands  
*Efficient personalized lumped parameter modeling of pulmonary arterial hypertension*
- 17.15 – 17.30 Closing day 1
- 19.00 Conference dinner

## Friday May 17<sup>th</sup>

- 08.00 – 09.00 Registration - coffee
- 09.00 – 10.25 Session Mechanotransduction II**
- 09.00 – 09.20 Ellie Tzima, University of Oxford, Oxford, United Kingdom  
*Mechanisms of endothelial flow sensing*
- 09.20 – 09.40 Caroline Cheng, UMC Utrecht, Utrecht, the Netherlands  
*TBA*
- 09.40 – 09.55 Tzung Hsiai, UCLA, Los Angeles, USA  
*Multi-Scale Mechano-OMIC Interactions to Uncover Molecular Transducers for Vascular Protection*
- 09.55 – 10.10 Elizabeth Jones, KU Leuven, Leuven, Belgium  
*Acetylation permits arterial gene expression in a SMAD1/5-dependent manner in the pre-flow embryo*
- 10.10 – 10.25 Rob Krams, Queen Mary University London, London, United Kingdom  
*A.I. driven RNA therapeutics. Validation with a new CRISPR high throughput platform*
- 10.25 – 11.00 Coffee break – posters



**Friday May 17<sup>th</sup>**

**11.00 – 12.10 Session Wall mechanics**

- 11.00 – 11.20 A. Akyildiz, Erasmus Medical Centre, Rotterdam, the Netherlands  
*Role of Mechanical Wall Stress in Coronary Atherosclerosis*
- 11.20 – 11.40 Koen Reesink, Maastricht University, Maastricht, the Netherlands  
*The Maastricht acquisition platform for studying mechanisms of cell-matrix crosstalk (MAPEX): Emerging insights on ascending thoracic aortic aneurysm formation*
- 11.40 – 11.55 Farhad Nezami, Harvard Medical School, Boston, USA  
*Real-Time Quantification of Patient-specific Wall Stress in Diseased Coronary Arteries*
- 11.55 – 12.10 Virginia Fregona, Politecnico di Milano, Milan, Italy  
*Impact of thrombus mechanical properties on virtual thrombectomy procedures*

12.10 – 13.45 Lunch - posters

13.45 – 14.15 NHS Lecture Hanjoong Jo, Emory University of Medicine, Atlanta, USA

**14.15 – 15.45 Session Human disease models**

- 14.15 – 14.35 Pat McGarry, University of Galway, Galway, Ireland  
*Microstructurally based biomechanical models for human thrombi*
- 14.35 – 14.55 Abdul Barakat, Ecole Polytechnique, Palaiseau, France  
*Role of Endothelial Cell Shape and Orientational Order in Angiogenic Sprouting*
- 14.55 – 15.15 Michele Conti, University of Pavia, Pavia, Italy  
*Bioprinting of 3D vascular models. Biofabrication Process and Preliminary Results using FRESH technique*
- 15.15 – 15.30 Frank Gijzen, Erasmus Medical Center, Rotterdam, the Netherlands  
*A tissue-engineered model of the atherosclerotic plaque cap with microcalcifications*
- 15.30 – 15.45 Gábor Závodszy, University of Amsterdam, Amsterdam, the Netherlands  
*Image-based flow and structural simulation of platelet aggregates under low, medium, and high shear flow conditions*

15.45 – 16.30 Awards, closing remarks, drinks

