The 12th international symposium on
Biomechanics in Vascular Biology and Cardiovascular Disease

Program
4-5 April 2017
Tuesday, April 4th 2017

08:30–08:55  Registration and coffee

08:55–09:00  Opening: Ton van der Steen, Erasmus Medical Center, NL

09:00–10:30  Aneurysm I

09:00–09:20  Gerhard Sommer, Graz University of Technology, Austria: Importance of the Microstructure to the Mechanical Properties of Healthy and Aneurysmatic ABDOMINAL Aortas

09:25–09:45  Stéphane Avril, Mines Saint-Étienne, France: Rupture risk estimation in thoracic aortic aneurysms

09:50–10:10  Christian Gasser, KTH Royal Institute of Technology, Sweden: Constitutive modeling of the aneurysmatic aorta

10:15–10:27  Bram Trachet, Ghent University, Belgium: Ascending versus dissecting aneurysms in Ang II–infused mice: different lesions, different mechanisms

10:30–11:00  Coffee break

11:00–11:20  Peter Hordijk, VU Amsterdam, NL: Actin-binding proteins differentially regulate endothelial cell stiffness and neutrophil transmigration

11:25–11:45  Jean-François Denis, University of Geneva, Switzerland: Shear stress-mediated expression of the atheroprotective transcription factor KLF4 affects Cx40 expression in endothelial cells

11:50–12:02  Elizabeth Jones, University of Leuven, Belgium: Shear Stress, Notch and VE-Cadherin: The Molecular Mechanism of Vascular Fusion

12:05–12:50  Model systems

12:05–12:17  Georgios Stefopoulos, Institute of Energy Technology, Switzerland: Surface topography protects endothelia from TNF-a inflammatory insult


12:35–12:47  Diego Gallo, Politecnico di Torino, Italy: Modelling the glycocalix-mediated transmission of hemodynamic shear forces to the endothelium: a multiscale study

12:50–14:00  Lunch with poster session

14:00–14:30  Dutch Heart Foundation Keynote lecture

Prof. Ingrid Fleming, Frankfurt University, Germany

14:35–15:55  Mechanosensing

14:35–14:55  David Beech, University of Leeds, UK: Piezo1 mechanical force sensor in the endothelium

15:00–15:20  Ellie Tzima, University of Oxford, UK: Integration of endothelial mechanotransduction pathways during arteriogenesis

15:25–15:37  Giannis Xanthis, University of Sheffield, UK: Uni- but not bi-directional shear force activates endothelial cell β1-integrin leading to calcium signaling

15:40–15:52  Stephanie Lehoux, McGill University, Canada: Early Plaque Regression is Associated with an Increased Abundance of CCR7 PDGFRα Cells

15:55–16:30  Coffee break

16:30–17:50  Atherosclerosis I

16:30–16:50  Peter Stone, Harvard Medical School, USA: Role of Low Endothelial Shear Stress and Plaque Characteristics in the Prediction of Non-culprit Major Adverse Cardiac Events: The PROSPECT Study

16:55–17:15  Victoria Ridger, University of Sheffield, UK: The Role of Shear Stress in Microvesicle Interactions with Arterial Endothelial Cells

17:20–17:32  Pim van Ooij, Academic Medical Center Amsterdam, NL: Spatial Correlations between Wall Shear Stress and Thickness in the Carotid Bifurcation

17:35–17:47  Annette Kok, Erasmus Medical Center, NL: The Role of TransWSS in the Prediction of Plaque Progression and Destabilization in Human Coronary Arteries

19:30–21:30  Conference dinner
Wednesday, April 5th 2017

09:00–10:20 Aneurysm II
Richard Lopata & Bram Trachet

09:00–09:20 Arunark Kolipaka, The Ohio State University, USA: Cardiovascular Magnetic Resonance Elastography

09:25–09:45 Uwe Raaz, University Medical Center Göttingen, Germany: A stent to prevent: a translational approach towards small abdominal aortic aneurysm (AAA) therapy

09:50–10:02 Mannekomba Diagbouga, Geneva University Medical Center, Switzerland: Does polycystic kidney disease affect the endothelial response to aneurysmal wall shear stress?

10:05–10:17 Emiel van Disseldorp, Eindhoven University of Technology, NL: Patient-Specific Mechanical Characterization of Abdominal Aortic Aneurysms and Healthy Volunteers Using 4D Ultrasound

10:20–11:00 Coffee break

11:00–12:05 Atherosclerosis II
Frank Gijsen & Stephanie Lehoux

11:00–11:20 Martin Bennett, University of Cambridge, UK: Plaque structural stress in plaque rupture

11:25–11:45 Umberto Morbiducci, Politecnico di Torino, Italy: Onset of arterial bifurcation disease – the hemodynamic risk hypothesis

11:50–12:02 Aliah Abuammah, Imperial College London, UK: A Novel High-throughput loss-of-function Microarray Platform for Targeting Gene Networks in Primary Cells

12:05–12:30 Epigenetics & Signaling
Hanjoong Jo & Peter Hordijk

12:05–12:25 Reinier Boon, Goethe University Frankfurt, Germany: Endothelial shear stress response and non-coding RNA

12:30–12:50 Peter Davies, University of Pennsylvania, USA: Oxidative stress associated with disturbed flow induces DNA methylation of endothelial HOXA5 promoter and suppresses its transcription in atherosusceptible regions in vivo and in endothelial cells in vitro

12:55–13:07 Christina Warboys, Imperial College London, UK: Inhibition of β-catenin-dependent transcription alters responses to disturbed flow in human aortic endothelial cells

13:10–14:00 Lunch with poster session

14:00–14:30 COEUR Keynote lecture
Ton van der Steen
Prof. Brett Bouma, Harvard Medical School, USA

14:35–16:30 Stents
Gis van Soest & Joost Daemen

14:35–14:55 Francesco Migliavacca, Politecnico Milano, Italy: CFD simulations from patient-specific OCT data

15:00–15:20 Abdul I. Barakat, INSERM, Paris, France: Optimizing the Performance of Drug-Eluting Stents: Simulations and Experiments


15:50–16:10 Philipp Nicol, German Heart Centre Munich, Germany: OCT imaging in Neoatherosclerosis

16:15–16:27 Erhan Tenekcioglu, Erasmus Medical Center, NL: Implications the local hemodynamic forces on neointima growth and the formation and destabilization of neoatherosclerotic lesions

16:30–17:30 Awards, closing and drinks