Program Overview

AUDITORIUM

Hour	Monday 14	Tuesday 15	Wednesday 16
8:30-9:15	Registration	A.Popel *John Hopkins University, USA*	N. Nuño *École de Technologie Supérieure, Canada*
9:15-10:00		M. Oshima *University of Tokyo, Japan*	J. Galle *Leipzig University, Germany*
10:00-10:30		Coffee break	
10:30-11:00	Opening	IMAG	MICRO1
11:00-11:45	S. Shefelbine, *Northeastern University, USA*		
11:45-12:30	C. Gasser *Royal Institute of Technology, Sweden*		
12:30-14:15	Lunch		
14:15-15:00	J. van der Sloten *University of Leuven, Belgium*	N. Smith *King´s College London, UK*	MICRO2
15:00-16:40	GROW1	COMUL	
16:40-17:10	Coffee break		
17:10-18:30	TISS1	TISS2	GROW2
19:00-20:30	Welcome reception	Free	Free
20:30-22:00			Conference dinner

Room AGORA

Hour	Monday 14	Tuesday 15	Wednesday 16
8:30-9:15	Registration	A.Popel *John Hopkins University, USA*	N. Nuño *École de Technologie Supérieure , Canada*
9:15-10:00		M. Oshima *University of Tokyo, Japan*	J. Galle *Leipzig University, Germany*
10:00-10:30		Coffee break	
10:30-11:00	Opening	BONE1	CARD1
11:00-11:45	S. Shefelbine, *Northeastern University, USA*		
11:45-12:30	C. Gasser *Royal Institute of Technology, Sweden*		
12:30-14:15	Lunch		
14:15-15:00	J. van der Sloten *University of Leuven, Belgium*	N. Smith *King´s College London, UK*	CARD2
15:00-16:40	HEART	BIODEV	
16:40-17:10	Coffee break		
17:10-18:30	RETIN	BONE2	Free
19:00-20:30	Welcome reception	Free	Free
20:30-22:00			Conference dinner

Room C1

Hour	Monday 14	Tuesday 15	Wednesday 16
8:30-9:15	Registration	A.Popel *John Hopkins University, USA*	N. Nuño *École de Technologie Supérieure , Canada*
9:15-10:00		M. Oshima *University of Tokyo, Japan*	J. Galle *Leipzig University, Germany*
10:00-10:30		Coffee break	
10:30-11:00	Opening	PRED1	UNCER
11:00-11:45	S. Shefelbine, *Northeastern University, USA*		
11:45-12:30	C. Gasser *Royal Institute of Technology, Sweden*		
12:30-14:15	Lunch		
14:15-15:00	J. van der Sloten *University of Leuven, Belgium*	N. Smith *King´s College London, UK*	ANGIO
15:00-16:40	NUSIM	HUMOV	
16:40-17:10	Coffee break		
17:10-18:30	HUMBE	PRED2	Free
19:00-20:30	Welcome reception	Free	Free
20:30-22:00			Conference dinner

List of Sessions

ANGIO	From molecules to vascular networks- Integrated modelling of angiogenesis
BIODEV	Biomaterials for implants, prostheses and medical devices
BONE	Verification and validation of computational bone mechanics
CARD	Computational cardiovascular modelling and blood flow simulation
COMUL	Coupling multiphysics and biophysical phenomena in soft tissue modelling
GROW	Modelling growth of biological tissues
HEART	Advances in computational heart modelling
HUMBE	Biomechanics applied to the Human Being
HUMOV	Biomechanics of human movement
IMAG	Biomedical imaging and visualization
MICRO	Microcirculation through numerical modelling
NUSIM	Numerical simulation
PRED	Predictive models and tools
RETIN	Functionally imaging the retina
TISS	Finite element constitutive modelling of biological tissues
UNCER	Uncertainty in computational bioengineering

Technical Program

Monday, September 14, 2015

REGISTRATION 8:30-10:30 Auditorium

OPENING CEREMONY 10:30-11:00 Auditorium
Fernando Orejas Vicechancellor of Research, Polytechnic University of Catalonia
Eugenio Oñate Director of CIMNE
Sebastiá Olivella Director of Barcelona School of Civil Engineering
Miguel Cerrolaza Conference Chair
Sergio Oller Conference Chair

KEYNOTE | Sandra Shefelbine, Northeastern University, USA 11:00-11:45 Auditorium
Using computation models to explore skeletal adaptation
Session Chair: Miguel Cerrolaza, CIMNE

KEYNOTE | Christian Gasser, Royal Institute of Technology, Sweden 11:45-12:30 Auditorium
The relevance of vascular biomechanics simulations in the clinical decision making process. Case study abdominal aortic aneurysm (AAA) repair indication
Session Chair: Sergio Oller, CIMNE

LUNCH 12:30-14:10

KEYNOTE | Jos van Der Sloten, University of Leuven, Belgium 14:10-14:55 Auditorium
Patient-specific implant design: image information and musculoskeletal modeling
Session Chair: Sandra Shefelbine, Northeastern University

ID	**GROW1 | Modelling growth of biological tissues** 15:00-16:40 Session Chair**: Sandra Shefelbine & Diego Garzón** Auditorium
164	A mathematical model for growth plate columnar organization *H. Castro, J. Guevara, L. Barrera, D. Garzón-Alvarado*
33	How do muscle forces during walking affect the femur's growth tendency in children? *P. Yadav, S.J. Shefelbine, E.M. Gutierrez-Farewik*
147	Predictive models for age-related bone time-dependent mechanical properties at the micro scale *S. Jaramillo Isaza, P.-E. Mazeran, K. El-Kirat, M.-C. Ho Ba Tho*
163	Variance reduction for a multiscale tumor growth simulation *A. Lejon, D. Roose, G. Samaey*
165	Evaluation of the role of mechanical stimuli in growth plate morphological evolution during long bone development *J. Guevara, H. Castro, M. Moncayo, L. Barrera, D. Garzón-Alvarado*

ID	**HEART | Advances in computational heart modelling** 15:00-16:40 Session Chair**: Mariano Vázquez** Room Agora
40	Arbitrary Lagrangian-Eulerian finite element modeling of aortic valves and the blood in the left ventricle *J. Hiromi, T. Nilsson, J. Jansson, J. Hoffman*
66	Model-based insights into the role of MyBPC in cardiac regulation and cardiomyopathy *J. Schwan, C. Wang, S. Campbell*
70	Two-dimensional mechanical model of a cardiomyocyte to assess the local inhomogeneities within the cell *P. García-Canadilla, A. González-Tendero, P. Schönleitner, V. Balicevic, S. Loncaric, M. Palazzi, G. Antoons, F. Crispi, E. Gratacos, B. Bijnens*
103	A Proper Orthogonal Decomposition with interpolation-based approach for real-time modelling of the heart *R. Rama, S. Skatulla, C. Sansour*
146	Prediction of right vs. left origin in outflow tract ventricular arrhythmias using computational electrophysiology *M. Guardiola, A. Pashaei, R. Sebastian, A. López, J. Acosta, D. Andreu, A. Berruezo, O. Camara*

ID	**NUSIM | Numerical simulation** 15:00-16:40 Session Chair**: Christian Gasser & Lalao Rakotomanana** Room C1
65	Computational fluid dynamics of a pediatric ventricular assist device *J.A. Isler, B.S. Carmo, J.R. Meneghini, I.A. Cestari*
128	Structural optimization of fiber-reinforced composite dentures using stress-induced material transformation *Y.C. Chen, A. Fok*
166	Numerical simulation of fluid-structure interaction in the semicircular canals and experimental measurement of nystagmus *N. Filipovic, D. Nikolic, Z. Milosevic, I. Saveljic, N. Zdravkovic*
41	Numerical simulation of 2D multi-species bacterial biofilm growth using the combined TDG-FIC finite element method *D. Feng, I. Neuweiler, U. Nackenhorst*

122	Effect of wave propagation and heat transfer in Skull-CSF-Brain system exposed to electromagnetic wave *H. Andriamiharinjaka, F. Razafimahery, L.R. Rakotomanana*

COFFEE BREAK 16:40-17:10

ID	**TISS1 | Finite element constitutive modelling of biological tissues** Session Chair**: Sergio Oller & Hanifeh Khayyeri**	17:10-18:30 Auditorium
153	A Conduction-Diffusion model for the bioavailability assessment in soft tissues growth and remodelling *F. Bellomo, L. Nallim, S. Oller*	
178	A reverse damage model for healing in soft biological tissues *E. Comellas, T.C. Gasser, F. Bellomo, S. Oller*	
84	Simulation and experimental validation of shear stress induced adhesion dynamics of platelets *J. Khamassi, C. Bierwisch, P. Pelz*	
149	Comparison of constitutive models for finite strain plasticity when applied to the microstructural modelling of trabecular bone *F. Levrero, L. Margetts, E. Sales, K. Manda, P. Pankaj*	

ID	**RETIN | Functionally imaging the retina** Session Chair**: Shuliang Jiao & Rong Wen**	17:10-18:30 Room Agora
102	Functional optical coherence tomography of retinal physiology *X. Yao, B. Wang*	
112	Imaging the functional biomarker of photoreceptors *S. Jiao, R. Wen*	
172	Modelling of red blood cells tracking in the retina vasculature *J. Ramella-Román, D. Rodríguez*	
31	Jones matrix imaging of *in-vivo* human eye *Y. Yasuno*	

ID	**HUMBE | Biomechanics applied to the Human Being** Session Chair**: Javier Bayod**	17:10-18:30 Room C1
95	Stress at the second metatarsal bone after correction of hammer and claw toe deformity: a finite element analysis using an anatomic model *R. Becerro, J. Bayod, M.E. Losa-Iglesias, M. Doblaré*	
101	Developing a proper biomechanical computational model *E. Morales-Orcajo, J. Bayod, E. Barbosa De Las Casas*	
132	Effect of the washed-out zone on the vulnerability window in regionally ischemic human heart *A. Mena-Tobar, J.M. Ferrero J.F. Rodríguez*	
36	Design and construction of a wheel-chair stretcher to assist non-professional caregiver attending senior with disabilities *M. Cárdenas, J. Cisneros, A. Heredia, J. Montaño*	

WELCOME RECEPTION 19:00-20:30

Tuesday, September 15, 2015

KEYNOTE | Aleksander Popel, John Hopkins University, USA — 8:30-9:15 Auditorium
Systems biology of angiogenesis and lymphangiogenesis in health and disease
Session Chair: Nicolas Smith, King's College London

KEYNOTE | Marie Oshima, University of Tokyo, Japan — 9:15-10:00 Auditorium
A computational study of the effects of carotid artery surgery on cerebral circulation
Session Chair: Christian Gasser, Royal Institute of Technology

COFFEE BREAK — 10:00-10:30

ID	**IMAG1 | Biomedical imaging and visualization** — Session Chair**: Joao Tavares & Harry van Lenthe** — 10:30-12:30 Auditorium
93	IVUS image conditioning for in-vivo characterization of arterial tissue *G.D. Maso Talou, J.M. Pérez Zerpa, P.J. Blanco, A. Canelas, R.A. Feijóo*
105	Important symptoms of rheumatic diseases detection based on a 3D MRI reconstruction *D. Gawel, A. Bednarek, P. Glówka, M. Nowak*
135	Accuracy and precision of Digital Volume Correlation (DVC) on different bone-biomaterial constructs in augmented vertebra *G. Tozzi, M. Palanca, V. Danesi, E. Dall'Ara, M. Viceconti, L. Cristofolini*
155	Scatter correction can enhance contrast in high-resolution Cone-Beam Computed Tomography images *K. Mys, E. Vereecke, F. Stockmans, H. van Lenthe*
170	Virtual models and three-dimensional impressions of rat, rhesus monkey and dog by MRI and TAC *R. Lara-Estrada, A. Morales-Guadarrama, J. Azpiroz, E. Sacristan*
48	Three-dimensional visualization of vascular bundles in stem internodes and nodes of maize *Y. Zhang, X. Guo, C. Zhao*

ID	**BONE1 | Verification and validation of computational bone mechanics** — Session Chair**: Ernst Rank & Michel Mesnard** — 10:30-12:30 Room Agora
34	The mechanical response of the human humerus *G. Dahan, Z. Yosibash*
173	A multiscale systems biology approach for computer simulation-based prediction of bone remodelling *M.I. Pastrama, S. Scheiner, P. Pivonka, C. Hellmich*
63	Loading simulation of spinal vertebrae using the finite cell method *M. Elhaddad, N. Zander, S. Kollmannsberger, J. Bauer, M. Ruess, E. Rank*
76	Enhancing the predictive capability of patient-specific simulation of human femurs with uncertainty quantification *H. Wille, M. Ruess, E. Rank, Z. Yosibash*
86	In-vivo assessment of femoral bone strength using Finite Element Analysis (FEA) based on routine MDCT imaging: a preliminary study on patients with vertebral fractures *J. Bauer, H. Liebl, E. Grande-Garcia, F. Holzner, P. Noel, R. Burgkart, T. Baum*

35	The mechanical response of a femur after total hip arthroplasty *Y. Katz, Z. Yosibash*

ID	**PRED1 | Predictive models and tools** Session Chair**: Natalia Nuño & Pedro Gomis**	10:30-12:30 Room C1
127	Finite element model of the overall human masticatory system for evaluation of stress distributions during biting and bruxism *S. Martinez, H.J. Schindler, J. Lenz, K. Schweizerhof*	
131	Dental implant numerical modelling using pile modelling scheme in civil engineering field *J.S. Choi, H.C. Noh, W.K. Song, Y.M. Lim*	
90	A multimodal nonverbal human-robot communication system *S. Saleh, M. Sahu, Z. Zafar, K. Berns*	
32	From individual to collective rules in emerging trail pattern formation in Argentine ants *M. Vela-Pérez, M.A. Fontelos, S. Garnier*	
136	Automatic detection of Brugada-like pattern on continuous electrocardiographic monitoring *M. Calvo, P. Gomis, A. Hernández, D. Andreu, E. Arbelo, P. Caminal*	
55	Modelling the crosstalk between DNA methylation and histone modifications in hyperplastic tissues *J. Przybilla, T. Rohlf, M. Loeffler, J. Galle*	

LUNCH 12:30-14:10

KEYNOTE \| Nicolas Smith, King's College London, UK 14:10-14:55
Auditorium
Can a clinician learn anything from a computational model of the heart?
Session Chair: Marie Oshima, University of Tokyo

ID	**COMUL | Coupling multiphysics and biophysical phenomena** Session Chair**: Jerome Noailly & Yoann Lafon**	15:00-16:40 Auditorium
151	Theoretical discrimination between intra- and extra-fibrillar water improves experimental correlations between intervertebral disc qMRI and composition *J. Noailly, T.T. Dao, M.M. van Rijsbergen, A. Bonet, P. Pouletaut, F. Charleux, K. Ito, M-C. Ho Ba Tho*	
74	Dynamics of epithelial tight junction as molecular and electric barrier – A computational approach *A. Tervonen, D. García-León, N. Onnela, S. Nymark, J. Hyttinen*	
152	Interpretation of intervertebral disc dynamic cultures through multi-scale system modelling *J. Reagh, S. Vizel, C. Ruiz-Wills, T. Di Blasi, A. Malandrino, F. Loeser, S. Chan, B. Gantenbein-Ritter, J. Noailly*	
125	Hybrid cell-centred/vertex model for three-dimensional monolayers *J. Muñoz, P. Mosaffa, N. Asadipour, D. Millán, A. Rodríguez-Ferran*	
109	How mechanical interactions between muscles can influence Echo-Elastographic measurements? A numerical study *J. Stelletta, R. Dumas, Y. Lafon*	

ID	**BIODEV | Biomaterials for implants, prostheses and medical devices** Session Chair**: Marie Oshima**	15:00-16:40 Room Agora

138	A new approach for the estimation of the Young´s modulus of metallic foams for biomedical applications *L. Pérez, I. Alfonso, D. Estay, S. Lascano, C. Aguilar*
111	The use of the coefficient of variation for comparison of force-time curves from handgrip tests *J. Marques, R. de Souza, C. Medeiros*
176	Histological and computational evaluation of four titanium dental implants: a comparative study *E. Dávila, M. Ortíz, M. Molmeneu, J. Gil, M. Cerrolaza*
116	Heterogeneous materials based on aperiodic structures for bone tissue substitutes *M. Sniechowski, J. Kaminski, J. Tarasiuk*
100	Experimentally based numerical model to characterize the thermo-mechanical response of hydrogel biomaterials *N. Santatriniaina, M. Nassajian, D. Pioletti, L. Rakotomanana*

ID	**HUMOV | Biomechanics of human movement** 15:00-16:40 Session Chair**: Josep M. Font & Tim Weber** Room C1
50	The musculoskeletal load scenario of computer-assisted Femur First THR up to one year after surgery *T. Weber, T. Renkawitz, J. Grifka, S. Bulstra, G. Verkerke, S. Dendorfer*
121	Influence of external fixator material in micromovemens of the bone callus *M.F. Paulino, A.M. Amaro, L.M. Roseiro, P. Carvalhais, M.A. Neto*
107	How do in vivo knee contact force data affect calibration of muscle-tendon model parameter values? *G. Serrancolí, A.L. Kinney, B.J. Fregly, J.M. Font-Llagunes*
97	A system to evaluate the measurements of the soles pressures, an approach to the mathematical model *W. Auccahuasi*
142	Effect of mandible protection and visor of the advanced combat helmet on human head response under blast loading *M. Rodríguez-Millán, L.B. Tan, K.M. Tse, J.A. Loya, H.P. Lee, M.H. Miguélez*

COFFEE BREAK 16:40-17:10

ID	**TISS2 | Finite element constitutive modelling of biological tissues** 17:10-18:30 Session Chair**: Sergio Oller & Hanifeh Khayyeri** Auditorium
59	Computational tendon engineering: towards understanding the structure-function relationship in tendons *H. Khayyeri, M. Thompson, H. Isaksson*
61	A microstructural constitutive model for the rat Achilles tendon *A. Gustafsson, H. Khayyeri, A. Heuijerjans, M. Matikainen, P. Julkunen, P. Eliasson, P.Aspenberg, H. Isaksson*
79	A fibre-reinforced hyperelastic constitutive model for healing tendon: a factorial design investigation *M.N. Bajuri, H. Isaksson, M.S. Thompson*
141	Investigation of anisotropic hyperelastic behavior of soft tissue using high-order finite elements *O. Sepahi, L. Radtke, A. Düester, S. Debus*

ID	**BONE2 | Verification and validation of computational bone mechanics** 17:10-18:30 Session Chair**: Ernst Rank & Michel Mesnard** Room Agora
53	Individual stress analysis and fracture simulation of bone tissue using anisotropic material properties *M. Koseki, T. Hasegawa, T. Kano*
54	Modeling approaches on the lumbar spine biomechanics - a comparative study *S. Faria, P. Fernandes, J. Folgado*
115	Experimental and numerical procedure for analysis of bone fracture *M. Marco, R. Larraínzar, J. Caeiro, E. Giner, H. Miguélez*
75	The disc morphology changes the temporomandibular joint behaviour. Numerical prediction in a specific case *A. Ramos, R. Duarte, M. Mesnard*

ID	**PRED2 | Predictive models and tools** 17:10-18:30 Session Chair**: Natalia Nuño & Pedro Gomis** Room C1
114	Development of multi-layered cellular automata model to predict nerve axonal extension process *A. Nakayama, T. Yamamoto, Y. Morita, E. Nakamachi*
30	Stochastic analysis of the size of gene families in the genome at any time of the evolutionary process *E. Ortega, J. Alonso, X. Li*
158	Shape optimization as a predictive tool in cardiovascular adaptation *K.W. Cassel, S.M. Javid, M.E. Boghosian, M.S. Hammes*
104	Analysis of heart rate variability with temporary ventricular pacing *A. Kuleshov, A. Zaretsky, A. Ilyin , A. Poteryakhina, A. Poteryakhin*

Wednesday, September 16, 2015

KEYNOTE \| Natalia Nuño, École de Technologie Supérieure, Canada 8:30-9:15
Numerical modeling of porous metallic materials for orthopedic applications Auditorium
Session Chair: Aleksander Popel, John Hopkins University

KEYNOTE \| Joerg Galle, Leipzig University, Germany 9:15-10:00
Multi-scale modeling of epigenetic regulation of stem cells Auditorium
Session Chair: Natalia Nuño, École de Technologie Supérieure

COFFEE BREAK 10:00-10:30

ID	**MICRO1 | Microcirculation through numerical modelling** 10:30-12:30 Session Chair**: Yi Sui** Auditorium
25	Off-plane motion of an oblate capsule in simple shear flow *A.V. Salsac, C. Dupont, F. Delahaye, D. Barthès-Biesel*

26	A numerical study of the oxygen transfer efficiency in microcirculatory system at several selected biological conditions *X. Gong, Z. Gong, H. Huang*
27	Massively parallel computing of the initial stage of thrombus formation *K. Sugiyama, S. Ii, S. Takagi, Y. Matsumoto*
37	Shape and dynamics of single red blood cells in shear and tube flows *J. Mauer, G. Gompper, D. Fedosov*
39	Understanding brain lymphatics using multi-scale numerical and analytical modelling *A.K. Diem, G. Richardson, R.O. Carare, N.W. Bressloff*
43	A coupling method for modelling flow and transport processes in vascularized biological tissue using a finite volume scheme *T. Koch, B. Flemisch, R. Helmig*

ID	**CARD1 | Computational cardiovascular modelling and blood flow** Session Chair**: Eduardo Soudah**	10:30-12:30 Room Agora
29	Blood vessels: computational multiscale homogenization *M. Marino, G.Vairo, P. Wriggers*	
58	Adding a resolved deformable particle model to a highly-parallel blood flow solver for sparse vascular networks *M.O. Bernabeu, M. d'Avezac, G. Macindoe, D. Groen, J. Hetherington, P.V. Coveney, T. Krüger*	
68	Large Eddy simulation in stenotic carotid bifurcations *R.M. Lancellotti, M. Domanin, A. Quarteroni, L. Valdettaro, C. Vergara*	
110	Influence of stent placement on the coronary bifurcation flow for conventional and specific designed stents *J. García, P. García, F. Manuel, Y. Doce, J. Goicolea, J.A. Fernández*	
108	Blood Flow patterns in thoracic aorta using 4D phase-contrast MRI and CFD *E. Soudah, J. Casacuberta, J.S. Ronda, R. Castilla, G. Raush, P.J. Gamez-Montero*	
117	Blood flow analysis of STA-MCA anastomosis using CFD *S. Takayama, M. Watanabe, H. Takao, D. Chihebeddine, H. Mamori, Y. Murayama, M. Yamamoto*	

ID	**UNCER | Uncertainty in computational bioengineering** Session Chair**: Marie-Christine HoBaTho & Tien T. Dao**	10:30-12:30 Room C1
42	Pattern activities recognition in the framework of medical nursing home using infrared sensors *P.A. Aguilar, C.M. Carvalho, D. Istrate, J. Boudy, T. Guettari, P. Doré, R.M. Andrade*	
62	Uncertainty quantification and sensitivity analysis for wave propagation models of the arterial systemic circulation *V.G. Eck, J. Feinberg, J. Sturdy, H.P. Langtangen, L.R. Hellevik*	
56	Computation of sensitivity derivatives for pediatric ventricular assist device using the Adjoint Method *J.S. Lima, J.A. Isler, E.V. Volpe, X. Mao, B.S. Carmo, I.A. Cestari*	
81	Uncertainty modelling in rigid musculoskeletal simulation using precise and imprecise probabilities *T.T. Dao, M.C. Ho Ba Tho*	

82	Expert elicitation using belief theory for assessing the biomedical data reliability *T.N. Hoang, T.T. Dao, M.C. Ho Ba Tho*
78	Computational methods for uncertainty quantification of complex biological systems *T. Baldacchino, K. Worden, J. Rowson*

LUNCH 12:30-14:20

ID	**MICRO2 | Microcirculation through numerical modelling** Session Chair**: Yi Sui**	14:20-16:40 Auditorium
49	Migrating motion and deformation of an oblate capsule flowing through a cylindrical channel *X.-Q. Hu, A.-V. Salsac, D. Barthes-Biesel*	
57	Simulation of blood flow in microfluidic devices: recent progress and outlook *T. Krüger, R. Vernekar*	
60	Microfluidic and computational studies on pressure drop and flow behaviour in curved and bifurcating microvessels *Y. He, R. Hu, F. Li, J. Lv, D. Lu, R. Himeno*	
71	Dynamic motion of oblate capsules and red blood cells in a capillary *Z. Wang, W. Wang, Y. Sui*	
73	Patterns and rheology in blood microcirculation *C. Misbah*	
174	Spatio-temporal variations of cell-free layer formation near an arteriolar bifurcation *S. Kim, Y. Ng, B. Namgung*	
175	The potential role of venous haemodynamics in some neurological diseases *E.F. Toro*	

ID	**CARD2 | Computational cardiovascular modelling and blood flow** Session Chair**: Eduardo Soudah**	14:20-16:40 Room Agora
120	Investigation on risk factors for cerebral aneurysm recanalization after coil embolization using CFD *S. Fujimura, H. Takao, M. Watanabe, D. Chihebeddine, H. Mamori, Y. Murayama, M. Yamamoto*	
126	Blood flow simulations in patient-specific aorto-coronary bypass models: The role of boundary conditions *A. Jonásova, J. Vimmr, O. Bublík*	
137	Computational tools for measuring heart strains *A. Evangelista, S. Gabriele, P. Nardinocchi, P. Piras, P. Puddu, L. Teresi, C. Torromeo, V. Varano*	
154	Object-in-fluid: a 3D computational tool for modelling of multi-cell systems in microfluidic channels and microarrays *I. Cimrák*	
156	Numerical simulation and analysis of oscillatory blood flow in arteries with and without aneurysms *N. Nikolov, S. Tabakova, S. Radev*	
157	Experimental and numerical investigation of non-Newtonian blood flow through an extracorporeal membrane oxygenator *L. Krenkel, F. Süess, M. Ruetten*	

159	A validation of coupling carotid and aortic baroreflex models to a 1D blood flow model of the systemic arterial tree *J. Sturdy, V.G. Eck, L.R. Hellevik*

ID	**ANGIO | Integrated modelling of angiogenesis** Session Chair**: Aleksander Popel & Roeland Merks**	14:20-16:40 Room C1
52	An optimal time window for cellular injections to enhance the healing of large segmental bone defects *A. Carlier, N. van Gastel, G. Carmeliet, L. Geris, H. Van Oosterwyck*	
67	Parameter identification and validation of multi-scale vascular tumour models using imaging data *J.A. Grogan, B. Markelc, T.T. Tapmeier, R.J. Muschel, J.M. Pitt-Francis, P.K. Maini, H.M. Byrne*	
72	Multi-scale modeling scheme of vascular network from microscopic and CT images based on pattern classification *J. Du, X. Guo, S. Lu, Y. Zhang*	
119	Tip cell overtaking occurs as a side effect of sprouting in computational models of angiogenesis *S.E. Boas, R.M. Merks*	
124	Predicted regulation by glycolysis of endothelial cell adhesion and filopodia formation during vessel sprouting *B. Cruys, B. Wong, A. Kuchnio, D. Verdegem, S. Vinckier, R. Merks, M. Dewerchin, H. Gerhardt, K. Bentley, P. Carmeliet*	
144	An agent-based model of interacting stem cells and cancer cells *M.A. Tehrani, D. Walker, C. Perrault*	
47	Identifying *m*RNA sequences and proteins through BCH error correcting codes over Z_4, F_4, Z_{20} and F_4xF_5 *M. Duarte-González, R. Palazzo*	

COFFEE BREAK 16:40-17:10

ID	**GROW2 | Modelling growth of biological tissues** Session Chair**: Sandra Shefelbine & Diego Garzón**	17:10-18:30 Auditorium
98	Database mammographic images under Peruvian cases and detection of microcalcifications based on fractal characteristics programmatically GPGPU *W. Auccahuasi, D. Urbina*	
140	Understanding the Slipped Capital (Upper) Femoral Epiphysis (SUFE) phenomenon by coupling rigid body and finite element modelling *T.T. Dao, W. Zhongzhen, X. Fang, T. Guo, M. Sangeux, M.C. Ho Ba Tho*	

ID	**FREE |** Session Chair**:**	17:10-18:30 Room Agora

ID	**FREE |** Session Chair**:**	17:10-18:30 Room C1

CLOSING CEREMONY 18:30-19:00 Auditorium

CONFERENCE DINNER 20:30