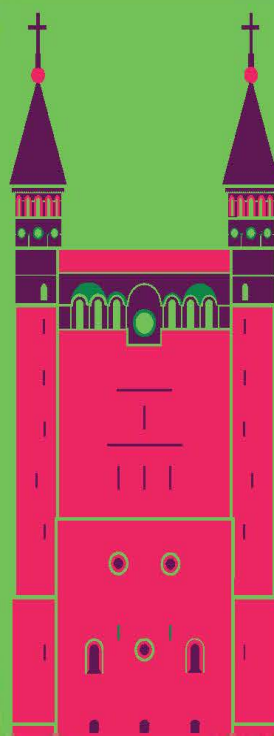
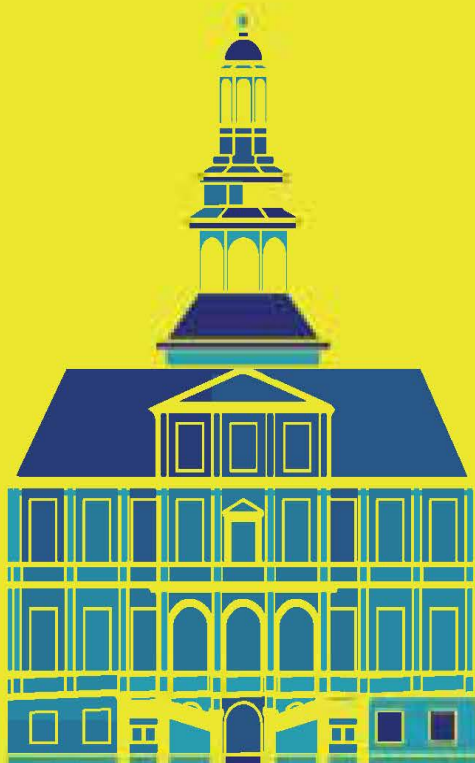




**BUILDING
BRIDGES**



EORS 2019

27TH ANNUAL MEETING

02-04 October 2019

Maastricht, the Netherlands

<https://eors2019.org>

Dear EORS delegates,

Welcome to the 2019 European Orthopaedic Research Meeting in the city of Maastricht in the Netherlands where we have an important international focus, with many international institutes, an university medical centre and a university. This European city in the Netherlands will provide an outstanding environment for facilitating and encouraging developments in research and clinical aspects of orthopaedic research. Our country and our region have a longstanding tradition and reputation in basic, translational and clinical orthopaedic research.

Maastricht lies at the heart of a Euregion of 4 million people who live in 3 countries and speak 4 languages. The energy that this generates has resulted in a city that bursts with creativity, with researchers and with young innovators. Also the culinary scene can cater to everyone's needs.

Maastricht, as the youngest university in the Netherlands is worldwide known for its teaching method and has become “Leading in Learning”. We offer our expertise, and knowledge to optimise learning and scientific exchange interaction.

In correspondence we have given our meeting the theme: “building bridges” and we aim to bridge collaboration between countries, societies, specialties and various fields of study to work towards true translational research.

Maastricht is proud to receive the European Orthopaedic Research Society community in 2019.

On behalf of the local organisation committee,



Dr. Chris Arts, Chair



**Dr. Holger Jahr, Co-Chair
Scientific program chair**

Dear Delegates,

As the EORS president and on behalf of the EORS board, I cordially welcome you to the 27th Annual Congress of the European Orthopaedic Research Society. The EORS 2019 congress is organized in partnership with the EORS and the Congress Chair Chris Arts from the Maastricht University Medical Centre and the Scientific Program Chair Holger Jahr from UK Aachen.

This time, the congress is guided by the motto “Building Bridges” which echoes the famous bridges in Maastricht, our host city, but also the connective tissues themselves, connections between scientists and even connections between societies.

The EORS 2019 has a wonderful compilation of keynote and invited lectures, open abstract presentations and posters that will be accompanied by vivid and critical discussions on connective tissues and their diseases, biomaterials, 3D printing, biomechanics, imaging, regenerative medicine and clinical translation. The meeting also offers plenty of networking possibilities, providing you with the opportunity to meet and interact with established researchers, young investigators, colleagues and friends as well as sponsors and exhibitors.

The Congress Venue is the MECC (Maastricht Exhibition & Congress Centre) – a meeting location that is very inviting, modern, excellently equipped and within walking distance from the Centre of Maastricht. Maastricht is one of the oldest cities in the Netherlands, as one can quickly discover when strolling streets marked by medieval-era architecture. Churches, city walls, monumental merchant houses and big squares merge seamlessly with a comprehensive and varied range of culinary hot spots and boutiques. Maastricht is also known as the youngest university in the Netherlands that harbors creative scientists and young innovators.

Let me now close by wishing you delightful and stimulating days at the EORS 2019 in Maastricht.



Prof. Dr. Denitsa Docheva
President of the EORS

EORS Executive committee

Denitsa Docheva, President

Gianluca Vadala, Vice-President

Holger Jahr, Vice-President

Boyko Gueorguiev, Secretary General

Jeanette Ostergaard Penny, Treasurer

Ashley Blom, Past President

EORS Ex-Officio Functions

Bernd Grimm, ICORS representative

Jeroen Geurts, Young Investigator Committee (Chair)

Gabriela Graziani , Young Investigator Committee

Stijn Bolink, Young Investigator Committee

Girish Pattappa, Social Media (Chair)

Luca Ambrosio, Social Media (co-Chair)

Elizabeth Baimayor, Female Leadership (Chair)

Federica Maisieri, Female Leadership (Chair)

Florelle Gindraux, EORS Ambassador France Fehmi

Volkan Oztuna, EORS Ambassador Turkey

EORS 2019 Local organizing committee

Chris Arts, Maastricht UMC & TU/e Eindhoven (Chair)

Bert Boonen, Zuyderland hospital Sittard

Tim Boymans, Maastricht UMC

Bernd Grimm, TU Munchen

Holger Jahr, UK Aachen (Co-Chair & scientific program chair)

Rob Janssen, MMC Veldhoven & TU/e Eindhoven

Wai-Yan Liu, MMC Eindhoven

Excel CS congress and event company



EORS 2019 Awards committee

Ashley Blom, University of Bristol

Marjolein Caron, Maastricht University

Holger Jahr, UK Aachen (Chair)

Gabrielle Tuijthof, Maastricht University

Conference venue

The congress will take place in the Maastricht Exhibition & Congress Centre (MECC) in Maastricht. MECC Maastricht is an ultramodern, dynamic organization that organizes and provides accommodation for fairs, conferences and major cultural and sporting events. The congress centre consists of three multi-functional floors which can all be reached from the registration area. All meetings, plenary and parallel sessions will be organized in the congress centre. Lunch and coffee/tea breaks will be held in the exhibition area.

WIFI

Name: EORS2019

Password: EORS2019

Speaker support

All speakers must upload their presentations at least 1 hour prior to their presentation at the speaker Support Room [Room 06-07].

Transport

The conference venue MECC is located opposite Maastricht University Medical Centre and close to Maastricht Randwyck train station that both are regularly serviced by public transportation buses and trains.

All delegates have free access to public transportation in Maastricht upon presentation of your EORS2019 name badge.

Social Events

EORS 2019 Young Investigators Social Event

9:00 PM - 11:30 PM

Wednesday October 2nd, 2019

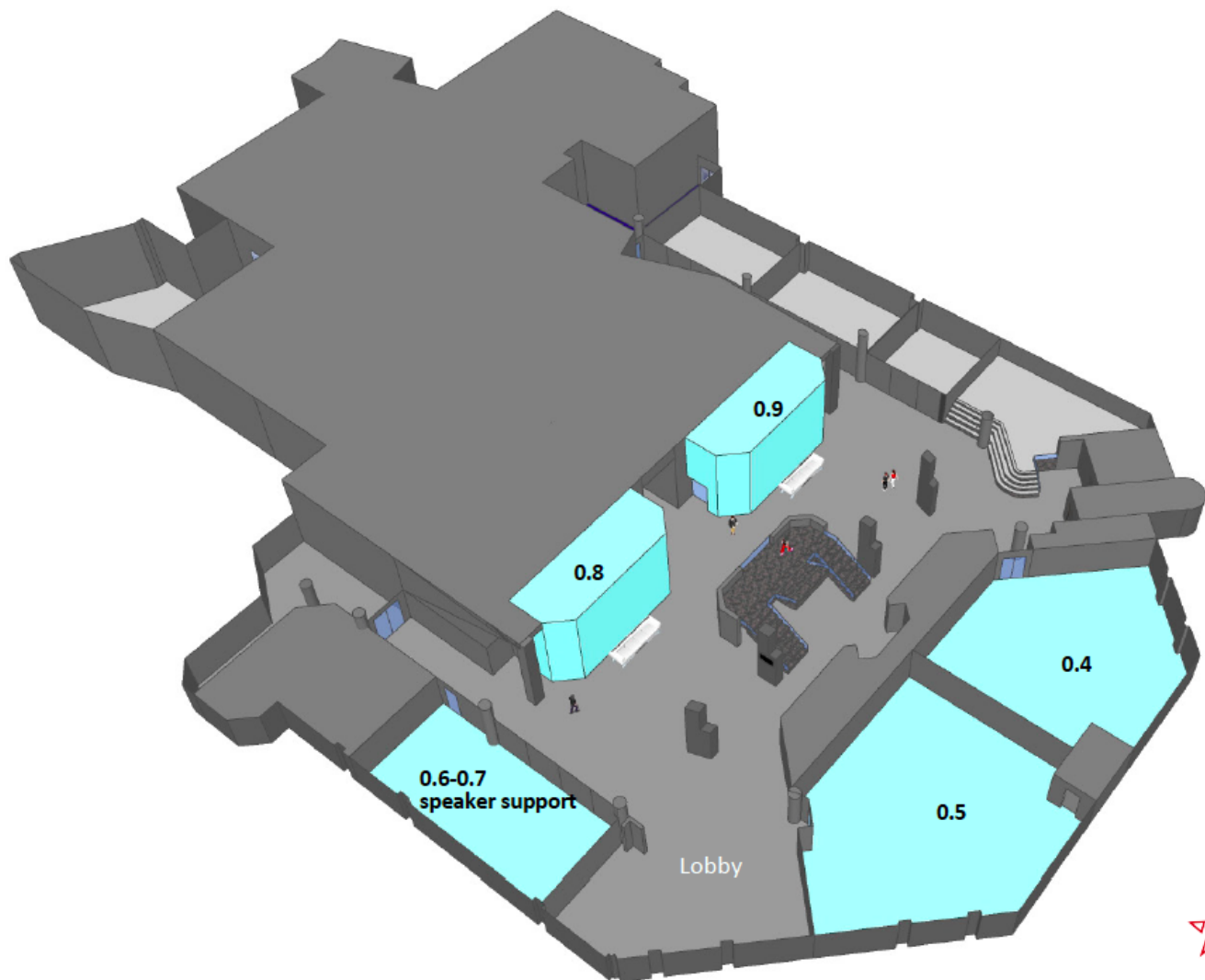
Bar Basilica, Vrijthof 15A, Maastricht

EORS 2019 Conference dinner

7:00 PM - 10:30 PM

Thursday October 3rd, 2019

MECC Cafe



EORS 2019 SCIENTIFIC PROGRAM WEDNESDAY OCTOBER 2ND

	ROOM 04	ROOM 08	ROOM 05	ROOM 09
10:00	REGISTRATION & COFFEE		REGISTRATION & COFFEE	
12:30	S1: Cartilage 1	S2: Joint replacement	S3: Osteoarthritis & Osteoporosis	S4: Additively Manufactured Devices
14:00	KEYNOTE 1: Ali Mobasher		KEYNOTE 2: Gerard Insley	
14:30	COFFEEBREAK & POSTERWALK		COFFEEBREAK & POSTERWALK	
15:00	S5: Clinical	S6: Biomaterials & infection	S7: Sarcopenia & Muscle	S8: Spine
16:30	SNACK & POSTERWALK		SNACK & POSTERWALK	
17:00	FPS1: Biomechanics & gait lower extremity	FPS2: Cellular Regenerative Medicine	FPS3: Tendon and ligaments	FPS4
18:00	KEYNOTE 3: Gerjo van Osch		KEYNOTE 4: Yves Henrotin	
18:30	YOUNG INVESTIGATORS EVENT		YOUNG INVESTIGATORS EVENT	

Schedule at a glance 03-10-2019

EORS 2019 SCIENTIFIC PROGRAM FRIDAY OCTOBER 4TH

	ROOM 04	ROOM 08	ROOM 05	ROOM 09
7:00	REGISTRATION & COFFEE			
8:00	S21: Biomechanics & Knee	S22: Registries	S23: Clinical III	S24: RSA
9:30	FPS17: Biomechanics lower extremity	FPS18: Bone Biomechanics	FPS19: Bone biology	FPS20: Bone fundamental research
10:30	COFFEEBREAK & POSTERWALK			
11:00	GENERAL ASSEMBLY EORS			
11:30	KEYNOTE 9: Britt Wildemann		KEYNOTE 10: Giorgio Perino	
12:00	FPS21: Functionalised biomaterials	FPS22: Imaging	FPS23: Clinical translation	FPS24: Arthroplasty clinical outcome
13:00	YI MEET THE MENTOR LUNCH	FAST LUNCH SYMPOSIUM	LUNCHBREAK AND POSTERWALK	TRANSLATION REUMAFONDS
14:00	S25: New Technologies / clinical	S26: 3D printing	S27: Imaging II	S28: Pathophysiology II
15:30	KEYNOTE 11: Bernd Rolaufts		KEYNOTE 12: Hamish Simpson	
16:00	COFFEE BREAK AND POSTERWALK			
16:30	S29: 3D printed medical devices	S30: Bone reconstruction	S31: Infection III	S32: Young Investigators Meeting
18:00	FPS25: Arthroplasty innovations	FPS26: Biologics & biomaterials	FPS27: Spine	FPS28: Clinical translation II
19:00	AWARDS & CLOSING CEREMONY			

Schedule at a glance 04-10-2019

EORS 2019 SCIENTIFIC PROGRAM FRIDAY OCTOBER 4TH

	ROOM 04	ROOM 08	ROOM 05	ROOM 09
7:00	REGISTRATION & COFFEE			
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19:00	AWARDS & CLOSING CEREMONY			

Platinum sponsor



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Meeting
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European Orthopaedic
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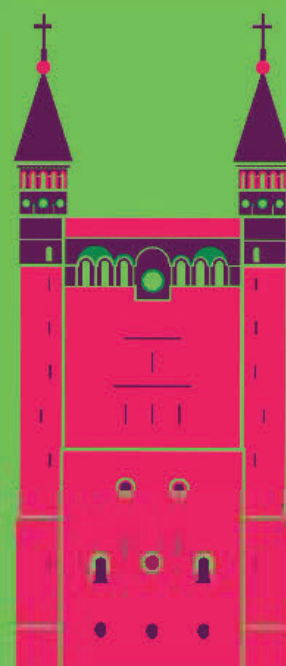
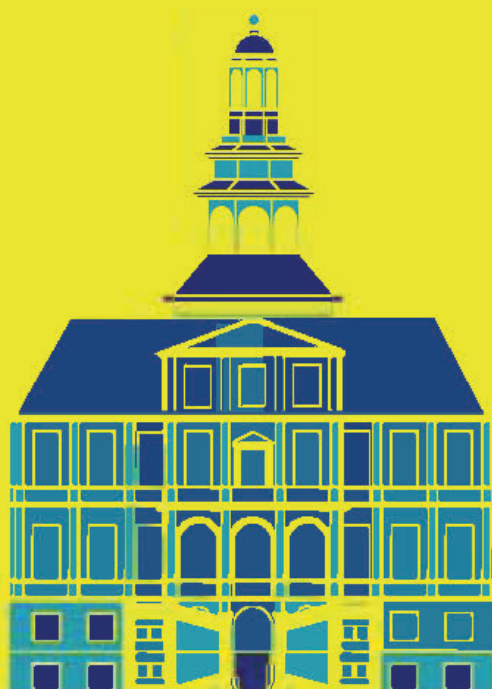


29th Annual Meeting
EUROPEAN ORTHOPAEDIC RESEARCH SOCIETY

WWW.EORS2021.ORG



SAVE THE DATE
2 - 4 OCTOBER 2019



Wednesday October 2 nd 2019	
Registration and setup	1000-1230
Registration and setup	1000-1230
Session 1: Cartilage 1 Innovative Imaging Diagnostics of Cartilage - What is new?	1230-1400
Chairs: Sven Nebelung & Daniel Truhn	Room 04
Machine Learning Approaches in Musculoskeletal Radiology – The Way Forward? Daniel Truhn (D)	25 min
Compositional MRI techniques for cartilage assessment -where are we and where are we headed? Jamy MacKay (UK)	25 min
Image-based Functionality Assessment of Cartilage - Insights from Bench to Bedside. Sven Nebelung (D)	25 min
FP1: 4515. Anterior tibiotalar fat pad morphology and signal intensity on magnetic resonance imaging are correlated with patient characteristics and joint pathology. Stijn Arnaert (BE)	10 min

Wednesday October 2 nd 2019		
Registration and setup		1000-1230
Registration and setup		1000-1230
Session 2:	Joint replacement	1230-1400
	Novel Perspectives in joint arthroplasty and out-patient surgery	
Chairs:	Bert Boonen & Martijn Schotanus	Room 08
Which patient factors are associated with successful outpatient joint arthroplasty? Bert Boonen (NL)		15 Min
What are the reasons for unsuccessful outpatient joint arthroplasty (early complications) and what are the main late complications? Mark Keulen (NL)		15 Min
How to implement outpatient joint arthroplasty in your hospital: tips and tricks. Youri Bemelmans (NL)		15 Min
Early outcome of the bi-cruciate and cruciate retaining total knee arthroplasty with Patient-Specific Instruments: results of A case controlled study. Soufyan Kalaai (NL)		15 Min
Long term follow-up of patient-specific instruments aligned total knee arthroplasty. Diewertje Theeuwes (NL)		15 Min

Wednesday October 2 nd 2019	
Registration and setup	1000-1230
Registration and setup	1000-1230
Session 3: Osteoarthritis & Osteoporosis Activating intrinsic cartilage repair to restore joint homeostasis: from bench to bedside Chairs: Gerjo van Osch & Pieter Emans	1230-1400 Room 05
Injectable hydrogels for cell-free cartilage repair. Marcel Karperien (NL)	25 Min
Understanding joint preservation, new insights from knee joint distraction. Simon Mastbergen (NL)	25 Min
FP2: 5706. The relationship between tibial cartilage thickness and bone mineral density varies with bone depth and osteoarthritis severity. Hugo Babel (CH)	10 Min
FP3:7596. Study of osteoarthritis (OA) development and prediction of potential intervention targets by an in silico approach. Raphaëlle Lesage (BE)	10 Min

Wednesday October 2 nd 2019	
Registration and setup	1000-1230
Registration and setup	1000-1230
Session 4: Additively manufactured devices Multifaceted Digital Additive Production for Orthopedics	1230-1400
Chairs: Johannes Schleifenbaum & Holger Jahr	Room 09
Individualized mechanical behaviour of scaffolds. Kai-Uwe Schroder (D)	25 Min
Patient-specific AM-scaffolds from bioabsorbable metals. Alexander Kopp (D)	15 Min
Selective laser sintering of biodegradable polymers for bone regeneration. Christoph Gayer (D)	15 Min
Manufacturability of solid-state hinges using L-PBF for medical applications. Kyra van den Heuvel (D)	15 Min

Wednesday October 2 nd 2019		
Keynote 1: Ali Mobasheri (LIT)		1400-1430
Chairs:	Bernd Grimm & Holger Jahr	Room 04
Calcium homeostasis in chondrocytes: mechanisms and dysfunctions in osteoarthritis. Ali Mobasheri (LIT/UK)		30 Min
Keynote 2: Gerard Insley (IE)		1400-1430
Chairs:	Chris Arts & Martijn van Griensven	Room 05
Clinical challenges in bone regeneration: unmet needs that define a new class of biomaterials. Gerard Insley (IE)		30 Min

Wednesday October 2 nd 2019	
Coffee break and poster walk	1430-1500
Session 5: Clinical	1500-1630
Cartilage: state of the art 2019	
Chairs: Rob Janssen & Pieter Emans	Room 04
Biomechanics of cartilage. Maria Pastrama (NL)	20 Min
Innovative Diagnostics of Cartilage - MRI and beyond. Sven Nebelung (D)	20 Min
Treatment algoritms in cartilage repair; when to regenerate and when to resurface. Pieter Emans (NL)	20 Min
Advice and consensus of cartilage repair in the Netherlands. Roel Custers (NL)	20 Min

Coffee break and poster walk		1430-1500
Session 6:	Biomaterials and infection	1500-1630
	S53P4 bioactive glass in the treatment of infected bone	
Chairs:	Nina Lindfors & Paul Jutte	Room 08
S53P4 bioactive glass working mechanism and current status. Nina Lindfors (FIN)		30 Min
Clinical results of S53P4 bioactive glass in osteomyelitis treatment. Paul Jutte (NL)		20 Min
Imaging of osteomyelitis and S53P4 bioactive glass. Dennis Hulsen (NL)		20 Min
FP130: 5518. Mesoporous bioactive glasses as smart platform to stimulate bone regeneration. Carlotta Pontremoli (IT)		10 Min

Wednesday October 2 nd 2019	
Coffee break and poster walk	1430-1500
Session 7: Sarcopenia & Muscle Recent advances in the diagnosis and treatment of sarcopenia	1500-1630
Chairs: Yves Henrotin & Holger Jahr	Room 05
Recent advances in the understanding of sarcopenia physiopathology. Yves Henrotin (BE)	20 Min
Soluble biochemical markers of sarcopenia: where are we now and where do we need to go? Ali Mobasher (LIT/UK)	20 Min
How can I diagnose sarcopenia in my current practice? Sandra de Breucker (BE)	20 Min
Resistance exercise as a countermeasure for Sarcopenia: local and systemic effects. Ivan Bautmans (BE)	20 Min

Coffee break and poster walk		1430-1500
Session 8:	Spine State of the art in intervertebral disc regeneration	1500-1630
Chairs:	Makarand Risbud & Gianluca Vadala	Room 09
Intervertebral disc regeneration: from bench to bedside. Gianluca Vadala (IT)		30 Min
IVD regeneration: From cell therapy to bioinspired endogenous repair strategies. Catherine Le Visage (FR)		30 Min
FP4: 7450. The Role of Type I Diabetes in Intervertebral Disc Degeneration. Fabrizio Russo (IT)		10 Min
FP5: 5651. Treshold expression of nerve growth factor in cartilaginous tissues in human spine osteoarthritis. Matthias Seidel (CH)		10 Min
FP6: 5607. Dorsal microsurgical decompression of psinal stenosis in the lumbar spine canal: pre- and postoperative analysis. Sophie Leroy (D)		10 Min

Wednesday October 2 nd 2019		
Snack and poster walk		1630-1700
FPS1:	Biomechanics and gait lower extremity	1700-1800
Chairs:	Boyko Gueorguiev & Gabrielle Tuijthof	Room 04
FP7: 4951. Characterizing a 3D human-based in vitro arthritic joint model composed of several components. Alexandra Damerau (D)		10 Min
FP8: 5629. Can a medially stabilized TKA design approach a natural knee kinematics? Nicola Pizza (IT)		10 Min
FP9: 5640. Displacement of sequential syndesmotic ankle injuries assessed by a 3D Weightbearing CT. A Cadaveric Analysis. Anthony Cossement (BE)		10 Min
FP10: 5998. Knee adduction moments are not increased in obese knee osteoarthritis patients during stair negotiation. Loek Verlaan (NL)		10 Min
FP11: 6585. Prediction of stair falls in older people using a biomechanical profiling approach: A 12-month longitudinal study. Thijs Ackermans (UK)		10 Min
FP12: 4900. Coronal alignment after total knee arthroplasty significantly influences in vivo knee kinematics during deep knee bend activity. Shinichiro Nakamura (JP)		10 Min

Wednesday October 2 nd 2019		
Snack and poster walk		1630-1700
FPS2:	Cellular regenerative medicine	1700-1830
Chairs:	Gerard Insley & Michelle Koerselman	Room 08
FP13: 4933. A scaffold-free graft for large critical size bone defect: preclinical evidence to clinical proof of concept. Pierre-Louis Docquier (BE)		10 Min
FP14: 4870. Isolation and Comparative Characterization of Exosomes from Human Mesenchymal Stem Cells by Ultracentrifuge and MACS Methods to enhance Bone Healing. Feza Korkusuz (TR)		10 Min
FP15: 5699. The Effect of Duration of Vitamin D3 Application on the Osteogenic Differentiation of Human Adipose Stem Cells. Cindy Kelder (NL)		10 Min
FP16: 5327. Injectable cryopreserved allogenic bone-forming cells derived from bone marrow MSC (ALLOB) display potent osteogenic and bone repair properties. Sylvain Normand (BE)		10 Min
FP17: 5683. Proteomics Characterization of hMSC chondrogenic and osteogenic differentiation in 3D printed scaffolds. Clarissa Tomasina (NL)		10 Min

Wednesday October 2 nd 2019		
Snack and poster walk		1630-1700
FPS3:	Tendon and ligaments	1700-1800
Chairs:	Denitsa Docheva & Gundula Schulze-Tanil	Room 05
FP19: 4924. Examination of the Site of Bone Bruises in Anterior Cruciate Ligament Injury. Kei Sasaki (JP)		10 Min
FP20: 5453. Activity level after lateral ankle ligament reconstruction, using gracilis autograft. Morten Kjaer (DK)		10 Min
FP21: 7304. Primary repair of the ACL using the Suture Tape Augmentation technique: a case series with 2-year follow-up. Christiaan Heusdens (BE)		10 Min
FP22: 6140. Assessment of Graft Maturity After Cruciate Ligament Reconstruction. A systematic review. Bart van Groningen (NL)		10 Min
FP23: 6406. Collagen fibril diameter distribution of bovine Anterior Cruciate Ligament changes from bimodal to unimodal upon injury with subsequent decrease in mean diameter. Cevat Erisken (KZ)		10 Min
FP24: 6575. Surgical repair outcome for tendinopathy is affected in obese patients microscopically. Matteo Spezia (IT)		10 Min

Wednesday October 2 nd 2019		
Snack and poster walk		1630-1700
FPS4:	TKA clinical translation	1700-1810
Chairs:	Caroline Mouton & Alex Roth	Room 09
FP160: 7556. A clinical audit to investigate the clinical utility of the Ottawa ankle rules scoring system to reduce ionising radiation exposure to patients with acute ankle injuries. Jonathan Cormack		10 Min
FP25: 6555. Morphometric characteristics of the trochleodysplastic knee: a landmark-based 3D analysis. Jonas Grammens (BE)		10 Min
FP26: 5712. Osseointegration of BCP-coated versus non-coated Non-Degradable Polyurethane Focal Knee Resurfacing Implants: A Caprine Proof-of-Concept study. Alex Roth (NL)		10 Min
FP27: 5505. 24 Hour Discharge In Unicompartmental Knee Replacement Using The Navio Robotic System: A Retrospective Analysis. Benjamin Sephton (UK)		10 Min
FP28: 5709. Guided Motion Total Knee Arthroplasty System: Five-Year Outcomes of the Prospective Multicenter US Study. Adam Harris (USA)		10 Min
FP29: 5708. Guided Motion Total Knee Arthroplasty (TKA) in Patients with BMI of 40 kg/m2 or More: Results from the International Multicenter Study of 2,059 Primary TKAs with up to 6 Years Follow-up. Adam Harris (USA)		10 Min
FP30: 5506. Should we routinely perform a post-operative haemaglobin cgeck following unicompartmental knee arthroplasty?		10 Min

Wednesday October 2 nd 2019	
Keynote 3: Chairs: Bernd Grimm & Holger Jahr	1800-1830 Room 04
Activating endogenous cartilage repair: targeting chondroprogenitor cells from the underlying bone. Gerjo van Osch (NL)	30 Min
Keynote 4: Chairs: Chris Arts & Tim Welting	1800-1830 Room 05
Recent Advances in the intra-articular treatment of osteoarthritis. Yves Henrotin (FR)	30 Min
Young investigator event: Bar Basilica, Vrijthof 15A, Maastricht	2100

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Official opening EORS 2019	0800-0830
Welcome to Maastricht Chris Arts, Chairman EORS 2019	0800-0810
Regional development Limburg and Euregio Kurt Gielen Business development Maastricht health campus Chemelot Inscite & Chief Business Officer Medace	0810-0820
General introduction ON foundation Norbert Passuti	0820-0830

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Official EORS 2019 opening ceremony	0800-0830
Session 9: Women leadership Women leadership in musculoskeletal science, orthopaedics and beyond	0830-1000
Chairs: Elizabeth Rosado Balmayor, Gabriela Graziani & Federica Masieri	Room 04
European projects: a challenge and a great opportunity. Chiara Vitale-Brovarone (IT)	35 min
Female representation in science, gender equality and the impact of females on scientific work. Prasad Shastri (D)	35 min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Official EORS 2019 opening ceremony	0800-0830
Session 10: Biomechanics Functional assessment in spinal deformity	0830-1000
Chairs: Lennart Scheys & Lieven Moke	Room 08
Prediction of intervertebral stiffness and loading through forward musculoskeletal simulations. Ilse Jonkers (NL)	10 min
Validation of a full-body musculoskeletal model with detailed lumbar spine, for estimating spinal muscle and joint loads in bending and lifting tasks. Erica Beaucage-Gauvreau (AUS)	10 min
Next steps towards musculoskeletal simulations and modeling-based clinical decision making in adult spinal deformity Lennart Scheys (BE)	10 Min
Functional assessment in ASD: an unmet clinical need? Lieven Moke (BE)	10 Min
Assessment of dynamic spinalalignment through instrumented motion analysis. P. Severijns (BE)	10 Min
Simulation-based vertebral kinematics using an image-based modelling platform. T. Overbergh (BE)	10 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Official EORS 2019 opening ceremony	0800-0830
Session 11: Infection 1 Modern and future technologies for treating orthopaedic infections	0830-1000
Chairs: Bart Pijls & Raymond Bevers	Room 05
Antimicrobial bioactive glass: clinical results and pre-clinical research Chris Arts (NL)	20 min
Segmental induction heating of orthopaedic metal implants Bart Pijls (NL)	20 min
Antimicrobial coatings: experimental results and future perspective Amir Zadpoor (NL)	20 Min
Antimicrobial peptides; current status Peter Nibbering (NL)	20 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Official EORS 2019 opening ceremony	0800-0830
Session 12: Pathophysiology 1 Engineering and predicting cell shape for controlling cellular and subcellular mechanobiology and cell function Chairs: Bernd Rolauffs & Gunther Schlunk	0830-1000 Room 09
Engineering cell shape and function using biophysical cues Bernd Rolauffs	30 min
Cell biology basis of cellular and subcellular mechanobiology Gunther Schlunk	30 min
Measurement and modelling of cell shape for evaluating cellular function Ryuji Kato (JP)	30 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Official EORS 2019 opening ceremony		0800-0830
FPS5:	Clinical education	1000-1100
Chairs:	Joao Valverde & Stefanie Kortner	Room 04
FP33: 6577. Quality over Quantity - Habitual Physical Activity and the Association with Metal Ion Concentrations in Unilateral Hip Resurfacing. Jetse Jelsma (NL)		10 min
FP34: 5436. The effect of Point of Care (POC) INR testing on delay to theatre in patients on warfarin with neck of femur fractures. Kendrick To (UK)		10 Min
FP35: 5478. Top 100 Cited Articles on Lumbar Spondylolisthesis: Bibliographic analysis. Khalifah Aldawsari (SA)		10 Min
FP36: 5307. Orthopaedic trainees, perceptions of the educational value of daily trauma meetings Zakir Haider (UK)		10 Min
FP37: 5475. Accuracy and quality of educational videos for elbow physical examination: what should our students watch? Elisa Zwerus (NL)		10 Min
FP38: 6450. NOF cancellation audit Jennifer Oluke (UK)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Official EORS 2019 opening ceremony		0800-0830
FPS6:	THA clinical translation	1000-1100
Chairs:	Carel Geerdink & Yusuke Kubo	Room 08
FP39: 4943. Patient experiences of recovery from one- and two-stage revision surgery for prosthetic hip infection. Andrew Moore (UK)		10 min
FP40: 4806. Risk factors for dislocation after primary total hip arthroplasty. Itsuki Oizumi (JP)		10 Min
FP41: 5728. Single Dose of Tranexamic Acid Effectively Reduced Blood Loss and Transfusions in Elderly Patients Undergoing Surgery for Hip Fracture. Vasileios Nikolaou (GR)		10 Min
FP42: 6264. The short-term functional and radiologic outcomes in adult patients who underwent total hip arthroplasty using the modified trochanteric slide approach. Pamela Gervasio (PH)		10 MIn
FP43: 6554. A sterilizable mechanical inclinometer to measure acetabular cup inclination: A proof of concept study. Mohammed Al-Ashqar (UK)		10 Min
FP44: 4795. Intraoperative evaluation of cup height using radiography in total hip arthroplasty. Kazuhiko Sonoda (JP)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Official EORS 2019 opening ceremony		0800-0830
FPS7:	Biomaterials & Infection THA clinical translation	1000-1100
Chairs:	Amir Zadpoor & Clarissa Tomasina	Room 05
FP45: 5785. Injectable, resorbable, porous bone substitute with controlled release of antimicrobial agents: a novel tool for the treatment of osteomyelitis. Lucy Vojtova (CZ)		10 min
FP46: 6400. EphA2 ligand-functionalized microparticles for targeted delivery of chemotherapeutic drugs against osteosarcoma. Zheng-gang Wang (CN)		10 Min
FP47:7675. A novel 3-dimensional in vitro model for osteomyelitis associated staphylococcal abscess communities. Marloes Hofstee (CH)		10 Min
FP48: 6580. Nanostructured silver thin films for biomedical devices: evaluation of biofilm inhibition capability. Gabriela Graziani (IT)		10 MIn
FP49: 5685. Sequential and sustained release of doxorubicin and paclitaxel from a calcium sulfate/hydroxyapatite carrier. Yang Liu (SE)		10 Min
FP50: 5501. Ruling out underlying infection in 200 unsuspected revision hip and knee arthroplasties using a multiplex PCR system. Petra Heesterbeek (NL)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Official EORS 2019 opening ceremony		0800-0830
FPS8:	Cartilage Pathobiology	1000-1100
Chairs:	Frank Zauke & Marjolein Caron	Room 09
FP51: 4869. Posttraumatic cartilage degradation progresses following anterior cruciate ligament reconstruction: A second-look arthroscopic evaluation. Takaaki Hiranaka (JP)		10 min
FP52: 4942. Osteoarthritic Changes in Chondrocytes Influence the Response to Mechanical Stimulation. Janine Lückgen (D)		10 Min
FP53: 5695. The loss of collagen type IX causes premature ossification of the murine femoral head. Juliane Heilig (D)		10 Min
FP54: 6568. Loading of chondrocytes in a multi-axial bioreactor platform shows differential responses between chondrogenic precursor cells and osteoarthritic chondrocytes. Anke Govaerts (BE)		10 MIn
FP55: 4868. Water jet drilling can safely be applied to microfracture talar chondral defects in the goat. Gabrielle Tuijthof (NL)		10 Min
FP56: 5447. The catabolic-to-anabolic shift in the osteoarthritic cartilage after knee joint distraction in dogs occurs after the distraction period. Michelle Teunissen (NL)		10 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1100-1130
Session 13: Clinical II	1130-1300
Osteonecrosis of the femoral head- Clinical update	
Chairs: Takuaki Yamamoto & Wolf Drescher	Room 04
Differentiation diagnosis between Osteonecrosis of the femoral head and Subchondral insufficiency fracture of the femoral head Takuaki Yamamoto (JP)	30 min
AVN of the hip – state of the art in diagnosis and therapy. Wolf Drescher (D)	15 Min
Clinical presentations of femoral head necrosis. Sebastian Lippross (D)	15 Min
Osteonecrosis of the femoral head and oxidative stress Yusuke Kubo (D)	15 Min
Osteonecrosis of the femoral head after fracture of the proximal Femur – symptoms, diagnosis and therapy. Frank Hildebrand (D)	15 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1100-1130
Session 14: Tendon & Muscle Anterior cruciate ligament remodeling	1130-1300
Chairs: Rob Janssen & Jasper Foolen	Room 08
Remodelling of anterior cruciate ligament in animals and humans and clinical consequences. Rob Janssen (NL)	20 min
Tendon to ligament mechanobiology. Jasper Foolen (NL)	20 Min
Insights in tenocyte biology and tendon pathology. Britt Wildemann (D)	20 Min
ACL graft osseous integration. Jess Snedeker (D)	20 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1100-1130
Session 15: Bone tissue engineering Bridging benchtop to bedside: peptides for bone tissue engineering	1130-1300
Chairs: Taco Blokhuis & Bert van Rietbergen	Room 05
Bioactive Peptides for Bone Growth and Regeneration Rick Visser (ESP)	20 min
P-15 Peptide: A Biomimetic Habitat for Bone Growth Jeff Markx (USA)	20 Min
Bone regeneration in vivo using the P-15 Peptide: Morphological and mechanical evaluation of newly formed bone after spinal fusion treatment Bert van Rietbergen (NL)	20 Min
Clinical evidence & experience with the P-15 Peptide Stephen McGillion (UK)	20 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1100-1130
Session 16: Osteoarthritis & Cartilage Controlling Cartilage to Bone Transitions for improved treatment of bone defects and OA	1130-1300
Chairs: Eric Farell & Gerjo van Osch	Room 09
Title tbd Roberte Tasso (IT)	30 min
Title tbd Frank Zaucke (D)	30 Min
FP57: 5642. An osteoporotic osteoarthritis phenotype is prevalent in prematurely ageing mitochondrial DNA mutator mice. Jeroen Geurts (CH)	10 Min
FP58: 5617. Identification of promoter reporters to monitor joint homeostasis in osteoarthritis. Margot Neefjes (NL)	10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Coffee break and poster walk		1100-1130
Session:	ReumaNederland	1300-1330
Chairs:	Chris Arts	Room 09
ReumaNederland. New strategies Corné Baatenburg de Jong (NL)		20 min

Wednesday October 2 nd 2019		
Keynote 5:		1400-1430
Chairs:	Chris Arts & Sjoerd Bulstra	Room 04
Outcomes of young hip patients from the Dutch arthroplasty register. Wim Schreurs (NL)		30 Min
Keynote 4:		1400-1430
Chairs:	Bernd Grimm & Holger Jahr	Room 05
Expanded autologous BM-MSCs to treat non-unions in an EU multi-centric trial. Enrique Gomez-Barrena (ESP)		30 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Lunch and poster walk		1300-1400
FPS9:	Biomaterials technology	1430-1530
Chairs:	Nicola Baldini & Clarissa Tomasina	Room 04
FP60: 5717. Hydroxyapatite: A Platform for Recruiting Systemically Administered Drugs. Deepak Raina (SE)		10 min
FP61: 4595. Influence of the processing temperature on the thermal and mechanical properties of Vitamin E blended UHMWPE crosslinked by X-rays. Marie Anne Mulliez (D)		10 Min
FP62: 6559. Development of Shape-memory Balloon for Bone Tumor Treatment. Sosuke Ouchi (JP)		10 Min
FP63: 5608. Design of 3D printed scaffolds mimicking the natural features of healthy bone. Giorgia Montalbano (IT)		10 Min
FP64: 5647. Biocompatibility and absorption behavior in vitro of direct printed porous iron implants. Prathyusha Pavanram (D)		10 Min
FP65: 5696. Bioactive nanostructured thin films for 3D-printed biomedical devices. Gabriela Graziani (IT)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Lunch and poster walk		1300-1400
FPS10:	Tendon morphology and anatomy	1430-1530
Chairs:	Gundula Schulze-Tanzil & Matteo Spezia	Room 08
FP66: 6574. The role of adipokines in tendinopathy: a systematic review. Matteo Spezia		10 min
FP67: 4917. Self-assembled collagen-rich constructs for tendon enthesis repair. Stefanie Korntner (IE)		10 Min
FP68: 4955. Development of anisotropic collagen substrates with controlled rigidity for tendon tissue engineering. Ignacio Sallent (IE)		10 Min
FP69: 5694. Ligamentocyte cell sheets for anterior cruciate ligament tissue engineering. Gundula Schulze-Tanzil (AT)		10 Min
FP70: 5880. Biology versus clinical outcome: a human Achilles tendon study. Franka Klatte-Schulz (D)		10 Min
FP71: 5560. A patient-specific micro-tissue platform to compare biological properties in vitro to patient outcome for anterior cruciate ligament reconstruction. Marc van Vijven (NL)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Lunch and poster walk		1300-1400
FPS11:	Clinical translation	1430-1530
Chairs:	Enrique Gomez-Barrena & Jetse Jelsma	Room 05
FP72: 5729.	An Audit of Distal Radius Fracture Management at a Level 2 Trauma Centre. Natalie Hope (UK)	10 min
FP73: 5731.	Post-Operative Urinary Retention Following Lower Limb Arthroplasty: Incidence And Analysis Of The Associated Factors Rakan Kabariti (UK)	10 Min
FP74: 5732.	What is the Cost of Chemical Venous Thromboembolism Prophylaxis in Primary Total Hip and Knee Arthroplasty Patients Following the Implementation of the Latest National Institute For Health and Care Excellence Guidance? Rakan Kabariti (UK)	10 Min
FP75: 5124.	Biphasic Plating. An In vivo study on a novel fixation concept to enhance mechanobiological fracture healing. Akintunde George (UK)	10 Min
FP76: 5522.	Continuous monitoring of fracture healing to analyze short-term response of bone repair tissue to mechanical stimulation Jan Barcik (CH)	10 Min
FP77: 5548.	Automated electromechanical system designed to investigate the effect of local mechanical conditions on fracture healing progression Jan Barcik (CH)	10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Lunch and poster walk		1300-1400
FPS12:	Bone osseointegration	1430-1530
Chairs:	Bernd Rolauffs & Michelle Teunissen	Room 05
FP78: 4891. Human trabecular lacunocanalicular fluid pressure: Cancellous bone biology. Taekyeong Lee (KOR)		10 min
FP79: 4922. The in vitro expression of the hypoxic inducible factor (HIF): It's role in clinical osseointegration. Akintunde George (UK)		10 Min
FP80:5960. The effect of IL-1beta in osteochondral tissues using a novel patellar explant for osteoarthritis. Isabel Amado (IE)		10 Min
FP81: 5692. Influence of low-frequency alternating electrical fields on the bone remodelling capacity of human osteoblast. Franziska Sahm (D)		10 Min
FP82: 5625. Engineered extracellular matrix enhances the bone regeneration potential of aged human bone marrow stromal cells. Darja Marholt Presen (AT)		10 Min
FP83: 5615. Evaluation of viability and functionality of an ex vivo bone defect model for applications in bone tissue engineering and regenerative medicine. Rywan Hassan (D)		10 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1530-1600
Session 17: Technology translation Measuring quality of movement: From lab to clinic	1600-1730
Chairs: Walter van Weegen & Matthijs Lipperts	Room 04
Measuring quality of movement using sensor technology in osteoarthritis patients. Han Boers (NL)	20 min
Analysis of on-track lower extremity movement and forces in motocross athletes. Matthijs Lipperts (NL)	20 Min
Measuring knee angles using activity monitoring devices. Walter van Weegen (NL)	20 Min
Assessing quality of movement in orthopedic patients: a physiotherapists view. Pim van Duin (NL)	20 Min
FP84: 5675. Comparative assessment of gait in total knee arthroplasty patients between multi-radius and gradually reducing radius femoral component designs during sit-to-stand and stair descent movement. Sang Jin Lee (KR)	10 min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1530-1600
Session 18: Infection II	1600-1730
<div> <div></div> <div>Racing for the surface: infection and interface bone tissue engineering</div> </div> <div> <div>Chairs:</div> <div>Thomas Webster & Bingyn Li</div> </div>	Room 08
<div> <div></div> <div>Goodbye Hospitals: Hello Implantable Sensors.</div> </div> <div> <div></div> <div>Thomas Webster (USA)</div> </div>	30 min
<div> <div></div> <div>Biofilm-inhibiting and osseointegration-promoting orthopedic implants with novel nanocoatings.</div> </div> <div> <div></div> <div>Ming Chen (USA)</div> </div>	20 Min
<div> <div></div> <div>Novel approaches for decreasing orthopaedic infections.</div> </div> <div> <div></div> <div>Karen Fox (AUS)</div> </div>	10 Min
<div> <div></div> <div>Dual release of biofilm inhibitor and local anesthetic from biopolymer nanofiber membranes for infection prevention.</div> </div> <div> <div></div> <div>Jessica Jennings (USA)</div> </div>	10 Min
<div> <div></div> <div>Strontium-Coated Halloysite Nanotubes for Remediation of Bone Infection and Bone Tissue Regeneration.</div> </div> <div> <div></div> <div>David Millis (USA)</div> </div>	10 min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1530-1600
Session 19: Clinical II Translational research on mechanisms and functional consequences of growth problems in developing children. Chairs: Adhiambo Witlox & Marieke van der Steen	1600-1730 Room 05
Effects of medication on endochondral ossification in vitro and in vivo. Marjolein Caron	20 min
Epiphysiodesis to reduce final height. Frank Jonkers (NL)	20 Min
Gait in typically developing children. Rachel Senden (NL)	20 Min
FP86: 6435. Inter-leg and gender differences in gait in typically developing children. Robin de Bot (NL)	10 min
FP85: 6260. Gait deviations in relapse clubfoot patients compared to healthy controls. Lianne Grin (NL)	10 Min

Thursday October 3 rd 2019	
Registration and coffee	0700-0800
Coffee break and poster walk	1530-1600
Session 20: Osteoarthritis & Cartilage II Cartilage microenvironment and OA: impact on treatment options	1600-1730
Chairs: Feng Sheng Wang & Holger Jahr	Room 05
Title tbd Holger jahr (D)	20 min
Title tbd Feng Sheng Weng (TW)	20 Min
Title tbd Wei-Shiung Lian (TW)	20 Min
FP87: 6528. Knock-down of RIPK1 in chondrocytes attenuates the pathogenesis of osteoarthritis. Zhenggang Wang (China)	10 Min
FP88: 5392. The role of Intrarticular Administration of Fetuin-A in Post-Traumatic Knee Osteoarthritis. An experimental study in a rat model. Kendrick To (UK)	10 min
FP115: 4823. Physioxia preconditioned Mesenchymal Stem Cells improve cartilage regeneration for the treatment of early osteoarthritis defects. Girish Pattappa (D)	10 Min

Wednesday October 2 nd 2019	
Keynote 3 : Chairs: Chris Arts	1400-1430 Room 04
Crosstalk between pH regulation and metabolic pathways in the intervertebral disc. Makarand Risbud (USA)	30 Min
Keynote 4: Chairs: Bernd Grimm & Holger Jahr	1400-1430 Room 05
miR-892b as novel inhibitor of hyperthrophy in chondrogenic differentiation of mesenchymal stem cells. Gunn-Il Im (KR)	30 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Coffee break and poster walk		1530-1600
FPS13:	Surgical technique optimisation	1800-1900
Chairs:	Pieter Paul Vergroessen & Anke Govaerts	Room 04
FP89: 4854. Patient-specific finite element computer models improve fracture risk predictions in cancer patients with femoral bone metastases compared to clinical guidelines. Florieke Eggermont (NL)		10 min
FP90: 5724. Five-year clinical outcomes of 263 cementless Oxford unicompartmental knee replacements at a non-inventor centre. Harshadkumar Rajgor (UK)		10 Min
FP91: 5736. A novel technique of minimally invasive dynamic hip screw. Gunasekaran Kumar (UK)		10 Min
FP92: 5720. Pre operative planning strategy for the fixation of complex ankle fractures at a major trauma centre: A 5 year study. Harshadkumar Rajgor (UK)		10 Min
FP93: 5690. Virtual Fracture Clinic : Have the implementation of new guidelines and teaching improved the service? A closed looped audit. Alexander Vaughan (UK)		10 Min
FP94: 5385. Anterior cruciate ligament reconstruction and return to sport: survey among orthopedic surgeons in the Netherlands. Baris Koc (NL)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Coffee break and poster walk		1530-1600
FPS14:	Arthroplasty revisited	1800-1900
Chairs:	Stijn Bolink & Ignacio Sallent	Room 08
FP95: 4950. Understanding why people with chronic post-surgical pain following knee replacement don't consult healthcare professionals. Andrew Moore (UK)		10 min
FP96: 6445. Uncemented Hemiarthroplasties: a relic from the past or the way of the future? Vivek Balachandar (UK)		10 Min
FP97: 5659. The Radiological Assessment of Knee Protheses at follow up after Total Knee Arthroplasty. Do we need to change our practice. Kendrick To (UK)		10 Min
FP98: 6576. Does a single Haemcuc test reduce the need for extensive pre-operative blood tests and their associated costs in elective arthroplasty? Joao Valverde (IT)		10 Min
FP99: 4299. Assessing the efficacy of educating patients on a day-to-day basis with a smartphone or tablet app in the first 4 weeks after total knee replacement surgery. Thomas Timmrs (NL)		10 Min
FP100: 7341. Improving Fracture clinic services and becoming compliant with BOAST 7 Guidelines with the use of Virtual Fracture clinic. Charles Wallace (UK)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Coffee break and poster walk		1530-1600
FPS15:	Implant fixation	1800-1900
Chairs:	Ivan Zderic & Marc van Vijven	Room 05
FP101: 5553. Influence of ligament restrain variation on the wear behaviour evaluated on a high conformity posterior stabilized rotating platform knee design. Jens Schwiesau (D)		10 min
5583 Lipid Profiles in Hoffa’s Fat Pad of Osteoarthritic vs Osteochondral Defect Patients. Mirella Haartmans (NL)		10 Min
FP103: 5649. Licochalcone A-induced apoptosis through activating p38 MAPK mediated mitochondria-apoptotic pathways in human osteosarcoma cells. Renn-Chia Lin (TW)		10 Min
FP104: 6463. Placement of poller screws during intramedullary nailing. Maria Tennyson (UK)		10 Min
FP105: 6578. Vestibular Symptoms are More Common in Higher Cobalt Ion Concentrations in MoM Arthroplasty. Jetse jelsma (NL)		10 Min

Thursday October 3 rd 2019		
Registration and coffee		0700-0800
Coffee break and poster walk		1530-1600
FPS16:	Molecular cartilage regeneration	1800-1900
Chairs:	Tim Welting & Marjolein Caron	Room 09
FP107: 5663. Enzymatically crosslinked natural polymers for cartilage repair. Bram Zoetebier (NL)		10 min
FP108: 5682. Identification of BMP-7-mimicking peptides that reverse the katabolic-chondrocyte phenotype in OA chondrocytes. Ellen Ripmeester (NL)		10 Min
FP109: 5684. The snorna U3 influences the cellular phenotype of chondrocytes and plays a role in their translational capacity. Ellen Ripmeester (NL)		10 Min
FP110: 5616. OA synovial fluid induces proliferation and dedifferentiation of non-OA human articular chondrocytes. Bas Housemans (NL)		10 Min
FP111: 5496. The gate to controlling chondrogenic differentiation: transcriptional regulation by Sox9 in ATDC5 cells. Marjolein Caron (NL)		10 Min
FP112: 5330. Expression of the ribosomal RNA pseudo-uridylase Dyskerin is decreased by inflammatory mediators in articular chondrocytes. Guus van den Akker (NL)		10 Min

Friday October 4 th 2019	
Registration and coffee	0700-0800
Session 21: Biomechanics & knee The clinical situation and novel treatment strategies for meniscus repair	0800-0930
Chairs: Girish Pattappa & Peter Angele	Room 04
Meniscus; clinical perspective, outlining current diagnostic methods and translational research. Annemieke van Haver (BE)	25 min
Update on cellular and biomaterial based strategies that are being investigated for meniscus treatment. Nicolo Vitale (IT)	25 Min
FP113: 5520. High incidence of previously neglected meniscus lesions influencing knee biomechanics in association with ACL injuries. Caroline Mouton (LU)	10 Min
FP114: 4589. Differences between horn and root cells of human medial meniscus in cellular characteristics and responses to mechanical stress. Yuki Okazaki (JP)	10 Min
FP115: 4823. Physioxia preconditioned Mesenchymal Stem Cells improve cartilage regeneration for the treatment of early osteoarthritis defects. Girish Pattappa (D)	10 Min

Friday October 4 th 2019	
Registration and coffee	0700-0800
Session 22: Registries	0800-0930
Arthroplasty registries	
Chairs: Wim Schreurs & Arjun Pavanedran	Room 08
The outcome of total knees in arthroplasty registries. Liza van Steenberg (NL)	25 min
Young hips in arthroplasty registers. Anything new? Martijn Kuipers (NL)	25 Min
FP116: 6308. Mortality and re-revision following single-stage and two-stage revision surgery for the management of infected primary hip replacement: a study from the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man. Erik Lenguerrand (UK)	10 Min
FP117: 5707. Guided Motion TKA System in Younger Patients Has a Lower Revision Rate than Registry Controls: Results from the International Multicenter Study with up to 6 Years Follow-up. Adam Harris (USA)	10 Min
FP118: 6304. Hip Replacement and type of fixation method: Meta-Analysis of Observational Cohort and Randomised Intervention Studies . Setor Kunutsor (UK)	10 Min
FP203: 6309. Mortality and re-revision following single-stage and two-stage revision surgery for the management of infected primary knee replacement: a study from the National Joint Registry for England, Wales, Northern Ireland and the Isle of Man. Erik Lenguerrand (UK)	10 Min

Friday October 4 th 2019	
Registration and coffee	0700-0800
Session 23: Clinical III	0800-0930
Polytrauma: importance of micro-vesicles on fracture healing	
Chairs: Frank Hildebrand & Klemens Horst	Room 05
Cross talk with miRNAs from the immunesystem to the bone. Martijn van Griensven (NL)	20 min
Complement and microvesicle interaction in polytrauma. Ebru Karasu (D)	20 Min
Emerging roles of extracellular vesicles in posttraumatic inflammation and cell function. Felix Blasius (D)	20 Min
Macrophage-derived EVs in Sepsis. Johannes Greve	20 Min
FP119: 6586. A health economic analysis of the cost of managing open fractures in the elderly. Caitlin Pley (UK)	10 Min

Friday October 4 th 2019	
Registration and coffee	0700-0800
Session 24: RSA Roentgen Stereogrammetric Analysis (RSA): current concepts and future prospects	0800-0930
Chairs: Petra Heesterbeek & Bart Kaptein	Room 09
Title tbd Bart Kaptein (NL)	20 min
Title tbd Eric Garling (NL)	20 Min
Title tbd Petra Heesterbeek (NL)	20 Min
FP120: 4904. Femoral Impaction Bone Grafting in Staged Revision Total Hip Arthroplasty for Infection: Clinical and Radiostereometric Analysis. Mukai Chimutengwende-Gordon (AUS)	10 Min
FP121: 4882. An audit on the use of a calibration marker on neck of femur fracture X-rays: a useful but forgotten tool. Rebecca Martin (UK)	10 Min
FP204: 6549. Radiostereometric analysis (RSA) of the uncemented Trident Tritanium and the Trident hydroxyapatite (HA) coated acetabular component shows equal implant stability after 2 years of clinical follow-up: a randomized controlled trial. Chris Arts (NL)	10 Min

Friday October 4 th 2019		
FPS17:	Biomechanics lower extremity	0930-1100
Chairs:	Bert van Rietbergen & Jonas Grammens	Room 04
FP122: 4938. Influence of radiation conditions and aging duration on the wear behaviour of an vitamin E stabilized TKA bearing. Jens Schwiesau (D)		10 min
FP123: 5193. Stability of Internal Fixation for Distal Clavicular Fractures. Kohei Kawai (JP)		10 Min
FP124: 5703. Using Statistical Shape and Intensity Models with Dynamic Stereo X-Ray. Allison Clouthier (CAN)		10 Min
FP125: 5796. Externalized Locked Plating Of Unstable Proximal Tibia Fractures Can Provide Sufficient Stability Under Partial Weight-bearing A Finite Element Study. Biser Makelov (CH)		10 Min
FP126: 6238. Elastic and viscoelastic characterization of Iliotibial Band and Gracilis Tendon Grafts for Anterolateral Ligament Reconstruction. Orcun Taylan (BE)		10 Min
FP127: 6454. Better Stability and More Predictive Fixation of the Femoral Neck System versus Two Hansson Pins in Pauwels II Femoral Neck Fractures , A Biomechanical Study. Clemens Schopper (CH)		10 Min

Friday October 4 th 2019		
FPS18:	Bone biomechanics	0930-1100
Chairs:	Philip Procter & Guus van den Akker	Room 08
FP128: 7457. Enhancing lifetime of prosthetic joint implants by fluidic lubricants. Ruben del Campo Muga (DK)		10 min
FP129: 7678. Improving fixation techniques of proximal humerus fractures by means of finite element analysis. Dominic Mischler (CH)		10 Min
FP31: 6800. Calculation of forces in UHMWPE cables used for correction of adult spinal deformities. Alireza Beheshtiha (NL)		10 Min
FP131: 5604. Treatment of Osteochondral Defects of the Knee using bilayered scaffold-free constructs in rats. Luis Freitas Mendes. (BE)		10 Min
FP132: 4901. FID-134: A Hyaluron-Bisphosphonate macromolecular drug delivery system for intra-articular treatment of osteoarthritis with potential combined cartilage and subchondral bone targeting. Mauro Pavan (IT)		10 Min
FP32: 5674. Pullout testing of spinal instrumentation in an in vivo mimicking experimental setup. Remco Doodkorte (NL)		10 Min

Friday October 4 th 2019		
FPS19:	Bone biology	0930-1100
Chairs:	Britt Wildemann & Maxime Eveque	Room 05
FP134: 5688. Wnt signaling and fibronectin fragments impair chondrocyte response to mechanical compression. Valeria Graceffa (BE)		10 min
FP135: 5698. Label-Free Proteomic Analysis of Osteochondrotic Chondrocytes. Elisabetta Chiaradia (IT)		10 Min
FP136: 5711. Cyclic stretching of ACL-derived fibroblasts in two-dimensional and three-dimensional biomaterial-free and biomaterial cultures leads to synchronized cell orientation and activation Clemens Goegele (D)		10 Min
FP137: 4907. Cell response to novel nanostructured titanium scaffolds ,Äa pilot study. Theresia Stich (D)		10 Min
FP138: 4920. Design and characterisation of a three-layer collagen-based scaffold to modulate BMSC behaviour for enthesis regeneration Eugenia Pugliese (IE)		10 Min

Friday October 4 th 2019		
FPS20:	Bone fundamental research	0930-1100
Chairs:	Jeroen Geurts & Janine Lueckgen	Room 09
FP140: 5603. Local non-viral gene delivery to immunomodulate and enhance fracture healing. Maria Atonia Gomez-Sierra (CH)		10 min
FP141: 5292. Retrograde Femoral Nailing Through an Open Physis Does Not Impair Growth in Pigs. Ahmed Abood (DK)		10 Min
FP142: 5556. Evidence-Based Generic Asian Pelvic Bone Models For Research, Development And Teaching Using CT-Based 3D Statistical Modeling. Ivan Zderic (CH)		10 Min
FP143: 5549. Evaluation of Inter- and Intra-operator Reliability of Manual Segmentation of Femoral Metastatic Lesions. Ali Ataei (NL)		10 Min
FP144: 4553. Isolated primary bone tumours of the lesser trochanter: demographics, diagnosis and management. Ahmed Isam Saad (UK)		10 Min
FP145: 5314. Familial influences in Blount disease. Niels Jansen (NL)		10 Min

Friday October 4 th 2019		
Coffee break and poster walk		1030-1100
General assembly EORS Room 05		1100-1130
Keynote 9:		1130-1200
Chairs:	Chris Arts & Paul Jutte	Room 04
<p>Optimized bone grafting material to prevent infection Crosstalk between pH regulation and metabolic pathways in the intervertebral disc.</p> <p>Britt Wildemann (D)</p>		30 Min
Keynote 4:		1130-1200
Chairs:	Bernd Grimm & Holger Jahr	Room 05
<p>The pathology contribution to adverse local tissue reactions to orthopaedic implants.</p> <p>Giogio Perino (USA)</p>		30 Min

Friday October 4 th 2019		
FPS21:	Functionalised biomaterials	1200-1300
Chairs:	Lorenzo Moroni & Maria Fernande	Room 04
FP146: 4903. An osteochondral culture platform to screen the bone forming potential stimulated by biomaterials. Sandra Hofmann (NL)		10 min
FP147: 5362. Topological and compositional gradients to generate 3D textured living microfibers resembling tendon-to-bone interface. Isabel Calejo (PT)		10 Min
FP148: 5396. Generation of A 3d Gradient Inducing a Precise Control Over Phenotype And Pre-Vasculature For Osteochondral Tissue Modelling. Raphael F. Canadas (PT)		10 Min
FP149: 6551. From failure to success: the in vivo translation of a novel bone adhesive test model. Philip Procter (SE)		10 Min
FP150: 5147. The impact of patient characteristics on length of hospital stay following joint arthroplasty in a developing country setting. Akintunde George (UK)		10 Min
FP151: 5900. Longitudinal analysis of effects of modified beta tricalcium scaffold on bone regeneration using a critical size fracture: healing model in mice. Mersedeh Tohidnezhad (D)		10 Min

Friday October 4 th 2019		
FPS22:	Imaging	1200-1300
Chairs:	Berta Cillero-Pastor & Marloes Peters	Room 08
FP152: 4699. Do the radiographic parameters influence the postoperative patient reported outcomes of Stage 2 acquired adult flatfoot deformity. Kensei Yoshimoto (JP)		10 min
FP153: 4958. Symmetry of the Normal Ankle Syndesmosis Analyzed by a 3D Weightbearing and non-Weightbearing CT. Tanguy Segers (BE)		10 Min
FP154: 5418. Weight-bearing low field MRI after total knee arthroplasty in patient with and without complaints. F.F. Schröder (NL)		10 Min
FP155: 5557. Influence Of Different Lisfranc Ligament Injuries On CT Findings. Preslav Penev (CH)		10 Min
FP156: 5504. Mass spectrometry imaging reveals specific lipidomic profiles between osteoarthritis and type 1 diabetes patients. M.R. Eveque-Mourroux (NL)		10 Min
FP157: 5721. The modified Hedgehog technique to reattach chondral fragments in the young adult knee follow-up with PROMs and 7.0T MRI at 3 months and 1 year after surgery. Marloes Peters (NL)		10 Min

Friday October 4 th 2019		
FPS23:	Clinical translation	1200-1300
Chairs:	Catherine van der Straeten & Rob Janssen	Room 05
FP158: 5434. Long-term functional outcome after a low-energy hip fracture in elderly patients. Stijn de Joode (NL)		10 min
FP159: 5572. Different answering scales used within the Constant-Murley Score are not interchangeable. Freek Hollman (NL)		10 Min
FP161: 5513. Clinical and Radiological Outcomes after Open Reduction and Internal Fixation of Lisfranc Injuries , A Single Centre Experience. Sandeep Kohli (UK)		10 Min
FP162: 5126. Trabecular Bone Score of Postmenopausal Women. Seyma Torgutalp (TK)		10 Min
FP163: 4871. Predictors for progression of osteoarthritis of the hip. Daisuke Chiba (JP)		10 Min

Friday October 4 th 2019		
FPS24:	Arthroplasty clinical outcome	1200-1300
Chairs:	Paul Jutte & Lennart Scheys	Room 09
FP164: 7582. Prospective Study of Patellar Tendon Changes with Ultrasonographic Investigation and the Effect on Clinical Outcomes After Knee Prosthesis. Muray Yesil (TU)		10 min
FP165: 5347. Excellent survival of two different anatomically adapted hydroxyapatite coated cementless THAs. A follow-up of more than 11 years. LJM Heijns (NL)		10 Min
FP166: 5733. Robotic vs navigated unicompartmental knee arthroplasty: How recreating native posterior tibial slope anatomy may improve early recovery. Thomas Edwards (UK)		10 Min
FP167: 5799. Robotic total knee arthroplasty may facilitate early recovery when compared to navigated and conventional jig based techniques. Thomas Edwards (UK)		10 Min
FP168: 7581. Bone Cement with Screw Augmentation Technique in Primary Knee Arthroplasty: When or How to use? Muray Yesil (TU)		10 Min
FP169: 6446. Day case versus inpatient elective total shoulder arthroplasty: A retrospective cohort study. Aditya Borakati (UK)		10 Min

Friday October 4 th 2019			
Lunch break and poster walk		-> Trajectum	1300-1400
Young Investigators meet the Mentor lunch		-> Room 04 Lunchboxes available in room	
Fast Lunch symposium		-> Room 08 Lunchboxes available in room	
Fast lunch Symposium			1300-1400
Chairs:	Lorenzo Moroni		Room 08
FAST: A novel 3D printing platform and materials for bone regeneration. Lorenzo Moroni (NL)			30 min
The HAM (hybrid additive manufacturing) bioscaffolder: surface functionalisation while 3d printing of a tailored bone scaffold. Paolo Scopece			15 Min
Biomaterial selection for Hybrid Additive Manufacturing (HAM): Tailoring Chemical and Physical Properties of Bio(nano)composites towards Bone Tissue Engineering Scaffolds Erwin Zant			15 Min

Friday October 4 th 2019	
Session 25: New technologies- clinical Wearable patient monitors for outcome assessment and rehabilitation in orthopaedics	1400-1530
Chairs: Bernd Grimm & Kenneth Meijer	Room 04
Title tbd Bernd Grimm (D)	20 min
Title tbd Kenneth Meijer (NL)	20 Min
Title tbd Jos Aarts NL	20 Min
FP170: 5723. Can an Activity-based Score Measure Health-gain in High Performing Patients After Hip Resurfacing Arthroplasty. Roberta Quarshie (UK)	10 Min
FP 171: 5710. A cloud-based platform to drive technology transfer of modeling and simulations tools across orthopedics research and development. Vincenzo Carbone (IT)	10 Min

Friday October 4 th 2019	
Session 26: 3D printing Additive manufacturing technologies in the design and fabrication of smart implants Chairs: Lorenzo Moroni & Nicola Baldini	1400-1530 Room 08
3D Biofabrication Strategies for Tendon Tissue Engineering. Wojciech Swieszkowski (P)	30 min
Integrated additive design and manufacturing approach for the bioengineering of bone scaffolds. Martijn van Griensven	30 Min
FP172: 5716. Fabrication of chemobrionic tubular calcium phosphate scaffolds. Erik Hughes (UK)	10 Min
FP173: 6583. Calcium-functionalized 3D silk gelatin bioink promotes osteogenesis of mesenchymal stromal cells: perspectives for orthopedic surgery. Cristina Manferdini (IT)	10 Min

Session 27: Imaging High resolution in vivo CT imaging of bone	1400-1530
Chairs: Bert van Rietbergen & Joop van den Bergh	Room 05
Imaging of bone lesions in joints with rheumatic diseases. Piet Geusens (BE)	30 min
Quantification of bone microstructure using cone-beam computed tomography. Harry van Lenthe (BE)	30 Min
Functional outcome of distal radius fractures and the effects of early post-fracture bone stiffness and vitamin D. Frans Heyer (NL)	15 Min
HR-pQCT imaging in patients with a clinically suspected scaphoid fracture. Melissa Bevers (NL)	15 Min

Friday October 4 th 2019	
Session 28: Pathophysiology II Recent advances in controlling cell phenotype function and secretome in vitro and in vivo	1400-1530
Chairs: Dimitrios Zeugolis & Manuela Gomes	Room 09
Magnetic tissue engineering: New tools to modulate inflammation and trigger tendon regeneration. Manuela Gomes (PT)	20 min
Can we intentionally control bone cells? Sandra Hofmann (NL)	20 Min
Developmental biology translated into regenerative therapies for chronic back pain. Marianna Tryfonidou (NL)	20 Min
Extracellular vesicles of MSCs and topographical cues for the modulation of tendon inflammation. Jayesh Dudhia (UK)	20 Min
Signaling response to osteomimetic citrate-based polymer composites. Arun Thirumaran (IE)	10 Min

Friday October 4 th 2019		
Keynote 11:		1530-1600
Chairs:	Bernd Grimm & Holger Jahr	Room 04
The spatial organisation of cells within their native tissue as image-based biomarker for early disease detection. Bernd Rolauffs (D)		30 Min
Keynote 12:		1530-1600
Chairs:	Chris Arts & Gerard Insley	Room 05
A novel clinically relevant model bone repair & Ten top tips for getting your paper published in BJR and other journals Hamish Simpson (UK)		30 Min

Friday October 4 th 2019	
Coffeebreak and poster walk	1600-1630
Session 29: 3D printed medical devices 3D printed absorbable metal implants: from bench to bedside	1630-1800
Chairs: Chris Arts & Holger Jahr	Room 04
How 3D printing is revolutionizing healthcare. Tim van Cleynenbreugel (B)	20 min
Clinical implementation of 3D printed custom made diaphysial bone solutions. Early experience and tips and tricks. Joris Ploegmakers (NL)	20 Min
Biodegradable metal implants: Opportunities and challenges. Holger Hjahr (D)	20 Min
FP 175: 7576. Computational optimization and biodegradation of 3D-printed patient-specific acetabular implants Mojtaba Barzegari (BE)	10 Min
FP176: 6405. Additively manufactured biodegradable porous zinc implants for Orthopaedic applications. Prathyusha Pavanram (D)	10 Min

Friday October 4 th 2019	
Coffeebreak and poster walk	1600-1630
Session 30: Bone reconstruction Limb Lengthening and reconstruction; state of the art and need for translational research.	1630-1800
Chairs: Soren Kold & Markus Frost	Room 08
Limb lengthening and bone reconstruction. State of the art. Soren Kold (DK)	30 min
Complications and continuous force measurement in limb lengthening. Markus Frost (DK)	20 Min
Electro-mechanical modeling and monitoring of bone healing. Ming Shen (DK)	20 Min
FP177: 6587. The Use of Entanox and intranasal Diamorphine is a safe and effective analgesia for the manipulation of displaced paediatric limb fractures . Paul Erdman (UK)	10 Min
FP178: 5582. Pixel Value Score Prior to Frame Removal in Tibial Lengthening. Markus Winther Frost (DK)	10 Min

Friday October 4 th 2019	
Coffeebreak and poster walk	1600-1630
Session 31: Infection III	1630-1800
Surface engineering strategies aginats orthopaedic implant challenges	
Chairs: Saber Amin Yavari & Sara Bagherifard	Room 05
Surface bio-functionalization of additively manufactured implants. Saber Amin Yavari (NL)	30 min
Development of advanced additive manufacturing techniques for fabrication of meta-materials. Amir Zadpoor (NL)	30 Min
Tailoring Surface Characteristics to Obtain Multifunctional Interfaces. Sara Bagherifard (IT)	10 Min
Developing a multi-functional supramolecular polymeric biomaterial with cell-adhesive and antimicrobial activity. Martijn Riool (NL)	10 Min
Microbial stimuli-based osteogenesis for implant functionalization Michiel Croes (NL)	10 Min

Friday October 4 th 2019	
Coffeebreak and poster walk	1600-1630
Session 32: Young Investigators meeting EORS young investigator symposium: international career development	1630-1800
Chairs: Jeroen Geurts & Gabriela Graziani	Room 09
My personal journey translating an idea from the desk into the clinic through the market: successes and pitfalls Lorenzo Moroni (NL)	30 min
Marie Skłodowska-Curie Individual Fellowships: from the proposal preparation to the project implementation. Enrico Sassoni (IT)	20 Min
Experiences of an AO trauma fellowship in Uppsala (Sweden) Loek Verlaan (NL)	20 Min
Organization of a clinical fellowship in South-Africa and United Kingdom Stijn Bolink (NL)	20 Min
Awards and closing ceremony EORS 2019	1900

Friday October 4 th 2019		
FPS25:	Arthroplasty Innovations	1800-1900
Chairs:	Walter van der Weegen & Tim Boymans	Room 04
FP179: 6591. Novel biomarkers in Osteomyelitis. Nachappa Sivanesan Uthraraj (UK)		10 min
FP180: 5507. Is tourniquet usage still needed in light of ever evolving blood management strategies? Benjamin Sephton (UK)		10 Min
FP181: 5512. Orthopaedics forward to precision medicine: Electronic tools using lifestyle parameters may lower the personal risk of early reoperations in total knee arthroplasty. Jiri Gallo (CZ)		10 Min
FP174:5613.Quantifying bone remodeling around the uncemented acetabular component using a modified scoring system of DeLee and Charnley. Sander van Eijck (NL)		10 Min
FP183: 5718. Early Clinical and Patient-Reported Results of a Bi-cruciate Retaining Total Knee Implant: Six-month Results of a Prospective Multicenter Study of 149 primary TKAs. James MacDonald (USA)		10 Min
FP184: 5734. Multimodal blood management for reducing perioperative blood loss in total knee arthroplasty. Fu Donglin (China)		10 Min
Awards and closing ceremony EORS 2019		1900

Friday October 4 th 2019		
FPS26:	Biologics & biomaterials	1800-1900
Chairs:	Gerard Insley & Chris Arts	Room 08
FP185: 7553. First clinical comparison of autologous conditioned serum secretome (ACS) vs platelet-rich plasma (PRP) as intra articular injections for knee osteoarthritis. K. Yu. Shirokova (RUS)		10 min
FP186: 5515. Inhibition of Bromodomain-Containing Protein 4 Counteracts Glucocorticoid-Induced Bone Loss and Fatty Marrow. Chung-Wen Kuo (TW)		10 Min
FP187: 5627. Histone Demethylase UTX Protects Against Glucocorticoid-Induced Osteogenesis Loss and Osteoporosis. Yu-Shan Chen (TAI)		10 Min
FP188: 6584. Material properties and multiaxial mechanical loading to optimize chondrogenesis but limit proteoglycan loss in cell-enriched hydrogel constructs. Seyed Ali Elahi (BE)		10 Min
FP189: 5595. Single injection of recombinant human bone morphogenetic protein-2-loaded artificial collagen-like peptide accelerates consolidation and bone union at the docking site in a mouse segmental bone transport model. Ryo Tazawa (JP)		10 Min
FP190: 5597.Evaluation of bone allograft processing methods: Impact on decellularization efficacy, biocompatibility and mesenchymal stem cell functionality. Alex Rasch (D)		10 Min
Awards and closing ceremony EORS 2019		1900

Friday October 4 th 2019		
FPS27:	Spine	1800-1900
Chairs:	Gianluca Vadala	Room 08
FP191: 5388. Construct validation of a Virtual reality simulator for percutaneous lumbar pedicle screw guidewire insertion. Alexander Charalambous (UK)		10 min
FP192: 5389. The use of Virtual reality simulation of percutaneous pedicle screw fixation; is there a training effect? Alexander Charalambous (UK)		10 Min
FP193: 5431. A cadaveric study of the cervical nerve roots and spinal segments. Ito Shunsuke (JP)		10 Min
FP194: 5479. Predictors of Transfusion for Adults Undergoing Elective Posterior Thoraco-lumbar Spinal Fusion. Khalid AlSaleh (SA)		10 Min
FP195: 5484. Advanced Glycation End Products (AGEs) in Hypertrophied Ligamentum Flavum of Diabetes Mellitus and Non Diabetes Mellitus. Mohammad Hasib Maruf (JP)		10 Min
FP196: 5653. Microcomputed tomographic, biomechanical and histological analyses of lumbar interbody fusion in pig model: Comparison of iliac crest bone graft and newly developed hybrid biodegradable nanocomposite porous implant. Milan Krticka (CZ)		10 Min
Awards and closing ceremony EORS 2019		1900

Friday October 4 th 2019		
FPS28:	Clinical translation II	1800-1900
Chairs:	Lisa Cecilie Reimer & Bert Boonen	Room 08
FP197: 6438. Scapular reconstructions using statistical shape modeling: Design and Validation. Alexander Meynen (BE)		10 min
FP198: 4964. Posterior Shoulder Instability: Is the Risk higher than anterior in specific sports? Ashley Simpson (UK)		10 Min
FP199: 5573. Equivalence between digital and paper-based Western Ontario Rotator Cuff index (WORC): a two-way crossover equivalence trial. R. Wessel (NL)		10 Min
FP200: 5317. Preliminary study on the use of 3D printed models in the pre-operative planning of revision ACL reconstruction. Akintunde George (UK)		10 Min
FP201: 5705. Clinical and Functional Outcomes of JOURNEY II Cruciate-Retaining Total Knee System: Interim Results of an Ongoing, Prospective, Multicenter Study. Pramod Achan (UK)		10 Min
FP202: 5910. Hypermobility among patients with greater trochanteric pain syndrome. Lisa Cecilie Urup Reimer (DK)		10 Min
Awards and closing ceremony EORS 2019		1900