



◆ Invited Speaker ▲ Plenary speaker

Tuesday, 25 th of September 2018	
Registration & Setup	09.00 – 12.00
Session 1: Clinical	12.00 – 13.00
Chairs: Aziz Ahmad (UK), Dries De Roos (BE)	Ballroom 1
S1.1 A comparative study between uncemented and hybrid total hip arthroplasty in octogenarians Aziz Ahmad (UK)	10 min
S1.2 The association between radiographic and functional outcomes after THA Stijn Bolink (UK)	10 min
S1.3 Effects of design modification in Zweymuller cementless total hip prosthesis Hiroyuki Ike (JP)	10 min
S1.4 The influence of a total knee arthroplasty on hindfoot alignment and vice versa: a systematic review Dries De Roos (BE)	10 min
S1.5 Pain and tourniquet use in TKA. What is the evidence? A systematic review and meta-analysis Shu Yang Hu (IE)	10 min
S1.6 Postoperative mobility of traumatised geriatric patients: a pilot study using Actibelt technology Timur Nuritdinow (DE)	10 min
Session 2: Clinical	12.00 – 13.00
Chairs: Samuel E. McMahon (UK), Adam Kelly (IE)	Ballroom 2
S2.1 Early radiologic assessment of revision total hip arthroplasty with the reclaim modular revision hip system Liana Wong (IE)	10 min
S2.2 Coned hemi-pelvis and total hip arthroplasty in acute complex acetabular fractures of the elderly Samuel E. McMahon (UK)	10 min
S2.3 Do patients arriving with a multiligament knee injury at the emergency department of a major trauma centre undergo adequate neurovascular assessment? Riki Houlden (UK)	10 min
S2.4 An experimental investigation of cement application methods in balloon kyphoplasty Adam Kelly (IE)	10 min
S2.5 Assessment of the current practice of the use of intraoperative neurophysiological monitoring in spinal surgery Bryan Foong (UK)	10 min
S2.6 Lessons learnt from immobilization study for improving the usage of mobile accelerometry in clinical trials Marcello Grassi (DE)	10 min



Session 3: Clinical	12.00 – 13.00
Chairs: Michael Warnock (UK), Arne Burssens (BE)	Ballroom 3
S3.1 Outcomes of conservatively managed complex acetabular fractures in the elderly Michael Warnock (UK)	10 min
S3.2 The effect of a hindfoot deformity on the full leg alignment assessed by weight-bearing CT Arne Burssens (BE)	10 min
S3.3 Impact of a medial calcaneal osteotomy on the longitudinal foot arch determined by weightbearing CT in 2D and 3D Aline Van Oevelen (BE)	10 min
S3.4 Diagnosis for labrum tear using radial sequence 3D multiple echo recombined gradient echo MRI: comparison with arthroscopic findings Shota Higashihira (JP)	10 min
S3.5 Intrinsic anatomical risk factors in high ankle sprains determined by 3D CT analysis Bert Cornelis (BE)	10 min
S3.6 A simple and low-cost drilling simulator for training plunging distance among orthopaedic surgery residents Efi Kazum (IL)	10 min
Session 4: Commercialisation	12.00 – 13.00
Chairs: Kieran Ryan (IE), Sean Cummings (IE)	Veranda
◆S4.1 Commercialising university technology Kieran Ryan (IE)	30 min
◆S4.2 Finding the ‘sweet spot’: timing patent applications to your advantage Sean Cummings (IE)	30 min
Session 5: Clinical	12.00 – 13.00
Chairs: Samuel Grant (UK), Rita Peixoto (IE)	Marina
S5.1 Operative times of orthopaedic trainees and consultant - is there a difference? Herbert Gbejuade (UK)	10 min
S5.2 Does rhizomelia dwarfism truly exist in the patients with achondroplasia? Young Jin Jung (KR)	10 min
S5.3 Surgical trainees’ beliefs regarding their intra-operative participation and its explanation during the informed consent process in a paediatric setting: a qualitative study Samuel Grant (UK)	10 min
S5.4 Can errors due to soft tissue artefact be reduced with use of probabilistic pose estimation? Alan DeAsha (US)	10 min



S5.5 Evaluation of a surgical wound closure system Rita Peixoto (IE)	10 min
S5.6 Intra-articular injections of expanded mesenchymal stem cells with and without addition of platelet-rich plasma Ronaldo J.F.C. Do Amaral (IE)	10 min
Lunch Break	13.00 – 14.00
Session 6: 3D Printing	14.00 – 15.30
Chairs: David Eglin (CH), Riccardo Levato (NL)	Ballroom 1
◆S6.1 Additive manufacturing for cranio-maxillofacial surgeries Florian Thieringer (CH)	25 min
◆S6.2 3D printing of bone-like scaffolds containing mesoporous glasses to treat osteoporotic fractures Chiara Vitale-Brovarone (IT)	25 min
◆S6.3 Biofabrication approaches to engineer complex bone and cartilaginous structures Riccardo Levato (NL)	25 min
S6.4 Evaluation of a novel in-situ monitoring technique during the additive manufacturing of titanium alloys Darragh Egan (IE)	10 min
Session 7: Sex & Gender	14.00 – 15.30
Chairs: Amy Hoang-Kim (CA), Amy L. Ladd (US)	Ballroom 2
◆S7.1 Sex and gender: why does it matter? Robin Mason (CA)	25 min
◆S7.2 Methods & design: integrating sex and gender into research Amy Hoang-Kim (CA)	25 min
◆S7.3 Gendered innovations Amy L. Ladd (US)	25 min
S7.4 Foot and ankle morphology association with age - MRI study Jakub Pekala (PL)	10 min
Session 8: Biomechanics	14.00 – 15.30
Chairs: María Ángeles Pérez Ansón (ES), Ted Vaughan (IE)	Ballroom 3
◆S8.1 Patient-specific planning of proximal femoral augmentation: in vitro and in silico approaches María Ángeles Pérez Ansón (ES)	25 min
◆S8.2 Biomechanics of orthopaedic surgical cutting processes – experimental and computational modelling Ted Vaughan (IE)	25 min



S8.3 Modelling of surgical technique for scapholunate instability Roberto Leonardo Diaz (UK)	10 min
S8.4 Building an in-silico model of micro-crack propagation in bovine cortical bone Morgana Afonso (IE)	10 min
S8.5 Femoral head size increase and its effects in the pelvic bone stresses in total hip arthroplasty David Jimenez Cruz (UK)	10 min
S8.6 Pin-on-disc: cartilage, bone and PE against 3-disc materials Reto Lerf (CH)	10 min
Session 9: Infection	14.00 – 15.30
Chairs: Michiaki Takagi (JP), Naomi Kobayashi (JP)	Veranda
◆S9.1 Innate immune sensors and selective autophagy in periprosthetic joint infection Michiaki Takagi (JP)	25 min
◆S9.2 Role of molecular diagnosis in periprosthetic joint infection Naomi Kobayashi (JP)	25 min
S9.3 One- or two-stage revision of infected knee replacements: is a randomised controlled trial feasible? Andrew Beswick (UK)	10 min
S9.4 Antibiotic nanosphere coated bilayer scaffolds for bone tissue engineering applications Sedef Tamburaci (TR)	10 min
S9.5 Evaluation of the capacity of an antibiotic-eluting scaffold to treat infection in a rabbit model of chronic osteomyelitis Eamon Sheehy (IE)	10 min
S9.6 Method of impregnation with the antibiotic of the head of the femur, taken from patients after arthroplasty Amangeldy Dolotbek Uulu (KZ)	10 min
Session 10: Bone	14.00 – 15.30
Chairs: Susan Clarke (UK), Fraser Buchanan (UK)	Marina
◆S10.1 Marine organisms for bone repair Susan Clarke (UK)	25 min
◆S10.2 Natural biosilica as an index for bone healing Pamela J. Walsh & Fraser Buchanan (UK)	25 min
S10.3 High throughput screening strategy for drug discovery: screening marine natural products as anti-inflammatory and pro-osteogenic bioactivity Pietro Marchese (IE)	10 min
S10.4 Exposure to extracorporeal shock waves induces formation of new mineralized tissue in zebra mussels inside as well as outside of the focus zone Katharina Sterneckner (DE)	10 min



S10.5 Intermittent teriparatide enhanced bone strength of femoral neck via changes of bone morphology and microarchitecture in ovariectomized rats Shun-Ping Wang (TW)	10 min
S10.6 Pulsed electromagnetic fields increase osteogenetic commitment of MSCs via the mTOR pathway: an in-vitro study Oleg Dolkart (IL)	10 min
Coffee Break & Poster Session	15.30 – 16.00
Session 11: Tissue Grafts & Decellularisation	16.00 – 17.30
Chairs: Heinz Redl (AT), Anthony Herbert (UK)	Ballroom 1
◆S11.1 Human amniotic membrane for novel applications in regenerative medicine Heinz Redl (AT)	25 min
◆S11.2 Development of decellularised xenogeneic and allogeneic biological scaffolds for musculoskeletal repair Anthony Herbert (UK)	25 min
◆S11.3 Generation of bone marrow mesenchymal stromal cell-derived ECM for therapeutic applications and beyond Eva Szegezdi (IE)	25 min
S11.4 Efficient decellularisation of extracellular matrix rich cell-derived matrices Naledi Shologu (IE)	10 min
Session 12: Immunomodulation	16.00 – 17.30
Chairs: Mary Murphy (IE), Eric Farrell (NL)	Ballroom 2
◆S12.1 Cell therapy for immune modulation in osteoarthritis Mary Murphy (IE)	25 min
◆S12.2 Donor-host interactions in bone tissue engineering: the role of the immune system in endochondral ossification Eric Farrell (NL)	25 min
S12.3 Chronological versus biological aging: experience in the adaptive immunity impacts bone homeostasis and regeneration Christian Bucher (DE)	10 min
S12.4 Macrophage polarisation and immuno-modulation by murine mesenchymal stem cells Swarna Raman (IE)	10 min
S12.5 Improved bone fracture healing by CD4+ regulatory T-cells is strictly dependent on individual effector/regulatory T-cell ratio Claudia Schlundt (DE)	10 min
S12.6 In vitro inflammatory response evaluation of pre-degraded bioresorbable polymers used in trauma fixation and tissue regeneration applications Lucy Geddes (UK)	10 min



Session 13: Biomechanics	16.00 – 17.30
Chairs: Sandra Utzschneider (DE), Jan Philippe Kretzer (DE)	Ballroom 3
<p>◆S13.1 Biological activity of wear particles <i>in vivo</i> Sandra Utzschneider (DE)</p> <p>◆S13.2 Tribological studies of joint replacements Jan Philippe Kretzer (DE)</p> <p>S13.3 Feasibility of pressure mat analyses of simple clinical tests in detecting instability in total knee arthroplasty: a proof of concept examination Alexandria Sehgal (UK)</p> <p>S13.4 Biotribological evaluation of metal ion release of cobalt-chromium-molybdenum and of zirconium nitride multilayer coated knee implant: an inter-laboratory comparison Burkhard Summer (DE)</p> <p>S13.5 The lever arm ratio of the rotator cuff and the deltoid muscle is related to the development of pseudoparalysis of the shoulder – a combined biomechanical and radiographic analysis of the shoulder abduction moment index Elias Bachmann (CH)</p> <p>S13.6 New hydrophilic coatings to improve wear in bearing surfaces for joint prosthesis Laura Sánchez-Abella (ES)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Session 14: Sensors	16.00 – 17.30
Chairs: Bernd Grimm (DE), Stijn Bolink (UK)	Veranda
<p>◆S14.1 Effectiveness of neuromuscular electrical stimulation (NMES) in assisting functional recovery following total knee arthroplasty Leo Quinlan (IE)</p> <p>◆S14.2 Mobility parameters from activity monitors for orthopaedic outcome assessment Bernd Grimm (DE)</p> <p>◆S14.3 A novel microneedle-based platform that achieves repeatable insertion and robust anchorage to soft tissue Eoin O'Cearbhaill (IE)</p> <p>S14.4 Dynamic 3D joint angle measurement using inertial sensors Matthijs Lipperts (NL)</p>	<p>25 min</p> <p>25 min</p> <p>25 min</p> <p>10 min</p>
Session 15: Osteoarthritis & Osteoporosis	16.00 – 17.30
Chairs: Susan Chubinskaya (US), Ali Mobasheri (UK)	Marina
<p>◆S15.1 New developments in biologic approaches to articular cartilage regeneration Susan Chubinskaya (US)</p> <p>◆S15.2 Osteoarthritis: phenotypes and immunometabolic alterations Ali Mobasheri (UK)</p> <p>S15.3 The location of tibial osteophytes is patient-specific in severe osteoarthritis Hugo Louis Babel (CH)</p>	<p>25 min</p> <p>25 min</p> <p>25 min</p>



S15.4 L2 bone quality in osteoporosis: Biomed 1 revisited Alan Boyde (UK)	10 min
S15.5 Osteoporosis influence on structural and mechanical properties of human humeral heads Giulia Molino (IT)	10 min
S15.6 The role of integrin $\alpha\beta3$ in osteocyte mechanotransduction during estrogen deficiency Ivor Geoghegan (IE)	10 min
Coffee Break & Poster Session	17.30 – 18.00
Workshop No 1: Female Leadership	18.00 – 19.30
Chairs: Jeannette Penny (DK), Federica F. Masieri (UK)	Ballroom 1
◆WS1.1 Leadership in universities in the 21st Century: a personal view Anne Scott (IE)	30 min
◆WS1.2 Female Leadership in STEM Caroline Spillane (IE)	30 min
◆WS1.3 The value of diversity in growing a company Ann Kramer (UK)	30 min
Workshop No 2: Commercialisation	18.00 – 19.30
Chairs: Philip Procter (SE), Virpi Muhonen (FI)	Ballroom 2
◆WS2.1 The design, development, and manufacture of biomaterials: the practice and value of biomimicry Peter Gingras (IE)	30 min
◆WS2.2 Designing a commercial biomaterial for a specific unmet clinical need – an adhesive odyssey Philip Procter (SE)	30 min
◆WS2.3 Career case: from cartilage regeneration researchers to entrepreneurs in a medical device start-up Virpi Muhonen (FI)	30 min
Workshop No 3: MSCs	18.00 – 19.30
Chairs: Matthew Griffin (IE), Roger Smith (UK)	Ballroom 3
◆WS3.1 GMP manufacture of MSCs for clinical trials Timothy O'Brien (IE)	30 min
◆WS3.2 Immunogenicity of allogeneic MSCs: more to the story Matthew Griffin (IE)	30 min
◆WS3.3 Which is better for augmenting intra-synovial tendon repair – mesenchymal stem cells or cell-free scaffolds? Roger Smith (UK)	30 min



Workshop No 4: Publishing	18.00 – 19.30
Chairs: Harriet Manning (UK), Kyle Legate (UK)	Veranda
◆ WS4.1 Innovation in open access publishing Harriet Manning (UK)	30 min
◆ WS4.2 Writing for impact: getting your research into top tier journals Kyle Legate (UK)	30 min
WS4.3 The reliability and readability of online resources on congenital talipes equinovarus Roisin Tully (IE)	15 min
WS4.4 Infographics – the future of research dissemination Andrew Hughes (IE)	15 min
Workshop No 5: Outreach	18.00 – 19.30
Chairs: Andrea FitzPatrick (IE), Sarah Gundy (IE)	Marina
◆ WS5.1 Creating impactful public engagement - identifying your audience Andrea FitzPatrick (IE)	45 min
◆ WS5.2 Creating impactful public engagement - creating impactful public engagement Sarah Gundy (IE)	45 min
Welcome Talks & Welcome Reception: The Galmont Hotel	20.00 – 23.00



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Wednesday, 26th of September 2018

Session 16: Biopolymers	09.00 – 10.30
Chairs: Tero Järvinen (FI), Anthony Weiss (AU)	Ballroom 1
◆ S16.1 Elastic biomaterials and accelerated bone repair Anthony Weiss (AU)	25 min
◆ S16.2 Systemically administered wound-homing peptide accelerates wound healing by activating syndecan-4 dependent cell migration pathway Tero Järvinen (FI)	25 min
S16.3 Development of collagen/hyaluronic acid-tyramine (COLL/THA) composite hydrogels with tunable gelling kinetic and THA content for the treatment of nucleus pulposus Christophe Helary (FR)	10 min
S16.4 Multilayer collagen-based scaffold as delivery vehicles of bioactive molecules for the bone-to-tendon interface regeneration Eugenia Pugliese (IE)	10 min
S16.5 Self-setting and injectable hyaluronic acid hydrogels with bioinspired properties for skeletal tissue engineering Killian Flegeau (FR)	10 min
S16.6 The role of hyaluronic acid in viscoelastic properties of equine pathological synovial fluid Panagiota Tyrmenopoulou (GR)	10 min
Session 17: Biomaterials	09.00 – 10.30
Chairs: Anthony Herbert (UK), Adrian Boyd (UK)	Ballroom 2
◆ S17.1 Controlling ossification using condensed phosphates Liam Grover (UK)	25 min
◆ S17.2 Enhanced methodologies to engineer the bone-biomaterial interface Adrian Boyd (UK)	25 min
S17.3 Novel 2D nanomaterials-reinforced nanocomposites for orthopaedic applications Tolou Shokuhfar (US)	10 min
S17.4 X-ray: an alternative technology to improve polyethylene properties as an orthopaedic implant material Marie Anne Mulliez (DE)	10 min
S17.5 Understanding the network formation, surface morphology, and cell viability of moulded hydrogels in various concentrations of a crosslinking solution Maha Alruwaili (IE)	10 min
S17.6 Assessing the properties of collagen type II scaffolds as a function of species, tissue and gender Zhuning Wu (IE)	10 min



Session 18: Tendon	09.00 – 10.30
Chairs: Denitsa Docheva (DE), Britt Wildemann (DE), Zexing Yan (DE)	Ballroom 3
<p>◆S18.1 Cellular and molecular processes during human Achilles tendon healing Britt Wildemann (DE)</p> <p>◆S18.2 The effect of Achilles tendon rupture on human muscle-tendon unit function Alison Agres (DE)</p> <p>S18.3 Pulsed electromagnetic field modulates the inflammatory environment induced by interleukin-1β on human tendon-derived cells Adriana Vinhas (PT)</p> <p>S18.4 Molecular control of tenocyte phenotype through matrix-mediated mechanotransduction Aysegul Dede-Eren (NL)</p> <p>S18.5 A multi-factorial toolbox towards tenogenic phenotype maintenance Dimitrios Tsiapalis (IE)</p> <p>S18.6 Correlations of longitudinal changes in dynamic jumping biomechanics and patellar tendon quantitative imaging measures in elite collegiate basketball players Andrew Kraszewski (US)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Session 19: Bone	09.00 – 10.30
Chairs: Nicholas Dunne (IE), Chunming Wang (CN)	Veranda
<p>◆S19.1 Delivery of self-assembling osteogenic nanoparticles via a thermo-responsive nanofibre reinforced hydrogel Nicholas Dunne (IE)</p> <p>◆S19.2 Modulating macrophage behaviour at the biomaterials-tissue interface for enhanced osteogenesis and osseointegration Chunming Wang (CN)</p> <p>S19.3 Adipose-derived stromal vascular fraction shows marked bone regenerative potential on a xenohybrid bone scaffold Giuseppe Perale (CH)</p> <p>S19.4 Heterogeneous and CD271-enriched MSCs show differential osteogenic potential when cultured on apatite-wollastonite 3D scaffold Xiao-Nong Wang (UK)</p> <p>S19.5 Human amniotic membrane for guided bone regeneration of calvarial defects in mice and improvement of its preservation procedure Mathilde Fenelon (FR)</p> <p>S19.6 Establishment of a mouse large bone defect model reconstructed by bone transport Ryo Tazawa (JP)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>



Session 20: Infection	09.00 – 10.30
Chairs: Alessandro Bistolfi (IT), Marta Miola (IT), Erik Lenguerrand (UK)	Marina
◆ S20.1 New approaches to reduce bacterial adhesion on polymethylmethacrylate (PMMA) Alessandro Bistolfi (IT)	25 min
◆ S20.2 Innovative PMMA-based bone cements containing a single inorganic phase with bioactive and antimicrobial properties Marta Miola (IT)	25 min
S20.3 Profile of minimum inhibitory concentration of Staphylococcus species in orthopaedics infection Akito Tomoyama (JP)	10 min
S20.4 Biological interest of cu-doped calcium phosphate bioceramics for bone tissue engineering Aurelie Jacobs (FR)	10 min
S20.5 Laser manufacturing of multi-functional and anti-bacterial surfaces for orthopaedic applications Ryan McFadden (UK)	10 min
S20.5 Risk factors associated with revision for prosthetic joint infection following primary knee replacement: evidence from England and Wales Erik Lenguerrand (UK)	10 min
Coffee Break & Poster Session	10.30 – 11.00
Session 21: Cartilage	11.00 – 13.00
Chairs: Brian Johnstone (US), Daniel Kelly (IE)	Ballroom 1
◆ S21.1 Articular cartilage progenitor cells Brian Johnstone (US)	25 min
◆ S21.2 Will chondro-inductive materials revolutionise cartilage regeneration? Michael Detamore (US)	25 min
◆ S21.3 3D bioprinting for bone and cartilage regeneration Daniel Kelly (IE)	25 min
◆ S21.4 Long term outcomes of matrix induced autologous chondrocyte implantation (MACI) inform the importance of functional barrier structure of osteochondral unit Ming Hao Zheng (AU)	25 min
S21.5 Mechanosensitive miR clusters regulated after loading of human engineered cartilage Nicole Hecht (DE)	10 min
S21.6 Composite based on chitosan and hydroxyapatite associated with platelet-rich plasma for bone and cartilaginous regeneration of femoral trochlea in rabbits Marcelo Jorge Cavalcanti de Sá (BR)	10 min



Session 22: Biomaterials	11.00 – 13.00
Chairs: Sander Leeuwenburgh (NL), Maria Chatzinikolaidou (GR), Michael Monaghan (IE)	Ballroom 2
◆S22.1 Design of novel composite biomaterials for bone regeneration with self-healing and load-bearing capacity Sander Leeuwenburgh (NL)	25 min
◆S22.2 Designing composite biomaterials to control biological and mechanical features in bone tissue engineering Maria Chatzinikolaidou (GR)	25 min
◆S22.3 Personalised bioactive implant made by stereolithography for orbital floor fracture repair David Eglin (CH)	25 min
◆S22.4 Osteoconductive microarchitecture realized by additive manufacturing Franz Weber (CH)	25 min
S22.5 Synthesis and characterisation of poly(vinyl alcohol) hydrogel cryogenic spheres for biomedical applications Bor Shin Chee (IE)	10 min
S22.6 Fabrication of a silver nanoparticle-coated collagen membrane with contained antibacterial and anti-inflammatory activities Peilin Chen (AU)	10 min
Session 23: Tendon	11.00 – 13.00
Chairs: Andreas Traweger (AT), Denis Barritault (FR), Heyong Yin (DE)	Ballroom 3
◆S23.1 Tendon degeneration and repair - lessons from tendon development and ageing Andreas Traweger (AT)	25 min
◆S23.2 Mechanisms of tendon generation, degeneration and regeneration Denitsa Docheva (DE)	25 min
◆S23.3 Enthesis regeneration with topographically designed scaffolds and growth factors Martijn van Griensven (DE)	25 min
◆S23.4 RGTA-based matrix therapy in regenerative medicine: background and recent developments in tendinopathies Denis Barritault (FR)	25 min
S23.5 Pulsed electromagnetic fields (PEMFs) stimulation for Achilles tendinopathy: an <i>in vivo</i> model Carlotta Perucca Orfei (IT)	10 min
S23.6 Pulsed electromagnetic field (PEMF) effects on soft tissue repair Erik Waldorff (US)	10 min



Session 24: MSCs	11.00 – 13.00
Chairs: Sofia Avnet (IT), Riccardo Ferracini (IT)	Veranda
◆S24.1 Extracellular microenvironment dictates the fate of mesenchymal stromal cells Sofia Avnet (IT)	25 min
◆S24.2 Mesenchymal stem cells from adipose tissue represent an asset for orthopaedic regenerative medicine Riccardo Ferracini (IT)	25 min
◆S24.3 Skeletal cell-based strategies for bone repair - opportunities and challenges Richard O.C. Oreffo (UK)	25 min
◆S24.4 Sustained release of targeted therapy with a replenishable implant reservoir Garry Duffy (IE)	25 min
S24.5 The role of cell death in mesenchymal stem cell therapy for osteoarthritis Patrizio Mancuso (IE)	10 min
S24.6 Assessment of novel macromolecular crowders to produce cell sheets for scaffold-free musculoskeletal tissue regeneration Sergio Garnica-Galvez (GR)	10 min
Session 25: Osteoarthritis & Osteoporosis	11.00 – 13.00
Chairs: Holger Jahr (DE), Feng-Sheng Wang (TW)	Marina
◆S25.1 Glutamate receptor antagonists alleviate osteoarthritic pain, inflammation and degeneration Deborah Mason (UK)	25 min
◆S25.2 The role of subchondral bone damage and bone marrow lesions in post-traumatic osteoarthritis Oran D. Kennedy (IE)	25 min
◆S25.3 Microenvironmental regulation of osteoarthritic chondrocyte function Holger Jahr (DE)	25 min
◆S25.4 MicroRNA and histone assembly regulation of osteoarthritis Feng-Sheng Wang (TW)	25 min
S25.5 DNA methylation inhibitor regulates brown and white marrow adipocyte redistribution in osteoporotic bone Yu Shan Chen	10 min
S25.6 Printing osteoarthritis models for drug testing Kenny Dalgarno (UK)	10 min
Lunch Break	13.00 – 14.00



Session 26: Cartilage		14.00 – 15.30
Chairs: Gianluca Vadala (IT), Stephen Kearns (IE), Girish Pattappa (DE)		Ballroom 1
<p>◆S26.1 Cross-talk between muscle and cartilage: the myokine irisin attenuates osteoarthritis-related cartilage degeneration Gianluca Vadala (IT)</p>		25 min
<p>◆S26.2 The role of orthobiologics in treating osteochondral lesions Stephen Kearns (IE)</p>		25 min
<p>S26.3 Bizonal cartilage constructs developing bottom zone–restricted <i>in vivo</i> mineralization Elke Kunisch (DE)</p>		10 min
<p>S26.4 Modulation of inflamed synovium and its macrophages improves chondrogenesis of bone marrow stromal cells Serdar Capar (NL)</p>		10 min
<p>S26.5 The fibrillar network of the lamina splendens of articular cartilage Rebecca Boyanich (AU)</p>		10 min
<p>S26.6 Physioxia modulation of II-1β inhibited chondrogenesis Girish Pattappa (DE)</p>		10 min
Session 27: Biomaterials		14.00 – 15.30
Chairs: Diego Mantovani (CA), Yufeng Zheng (CN)		Ballroom 2
<p>◆S27.1 Biodegradable metals with extreme properties for innovative biomaterials Diego Mantovani (CA)</p>		25 min
<p>◆S27.2 Biodegradable Zn based alloys designed for future orthopaedic application Yufeng Zheng (CN)</p>		25 min
<p>S27.3 Design and characterization of synthetic biodegradable films for musculoskeletal tissue engineering Sofia Ribeiro (IE)</p>		10 min
<p>S27.4 Decellularised porcine peritoneum as a multifunctional material for tendon tissue engineering Héctor Capella (IE)</p>		10 min
<p>S27.5 A new composite biomaterial of osteoinductive nanohydroxyapatite (nHAP), synthetic polymer (PLA-PEG) and bone morphogenetic protein-2 (rhBMP-2) for bone regeneration Zeynep Bal (JP)</p>		10 min
<p>S27.6 Direct metal printed biodegradable porous magnesium scaffolds for orthopaedic applications Prathyusha Pavanram (DE)</p>		10 min



Session 28: Bone		14.00 – 15.30
Chairs: Cynthia Coleman (IE), Patrick O'Connor (US)		Ballroom 3
<p>◆S28.1 Mesenchymal stromal cell therapy supports diabetic femoral fracture healing Cynthia Coleman (IE)</p>		25 min
<p>◆S28.2 COX-2 expression in osteoclasts promotes fracture healing Patrick O'Connor (US)</p>		25 min
<p>S28.3 A qualitative study on the perception of diabetes mellitus-related osteopathy in individuals living with type 1 diabetes mellitus Clara Sanz-Nogués (IE)</p>		10 min
<p>S28.4 Differences in metaphyseal and cortical bone regeneration using local delivery of bone morphogenic protein-2 and zoledronic acid: a step towards guided tissue engineering Deepak Bushan Raina (SE)</p>		10 min
<p>S28.5 Sclerostin vaccination prevents estrogen loss-induced osteoporosis Wei-Shiung Lian (TW)</p>		10 min
<p>S28.6 Pulsed electromagnetic fields mediate anti-inflammatory effects through adenosine receptors pathway in joint cells Fabrizio Vincenzi (IT)</p>		10 min
Session 29: MSCs		14.00 – 15.30
Chairs: Jan de Boer (NL), Manuel Salmeron-Sanchez (UK)		Veranda
<p>◆S29.1 Nanoscale approaches to mesenchymal stem cell engineering Matthew Dalby (UK)</p>		25 min
<p>◆S29.2 Digitizing life at the cell-biomaterials interface Jan de Boer (NL)</p>		25 min
<p>S29.3 Novel integrin alpha 11-dependent pathway involved in tendon stem/progenitor cell (TSPC) aging and degeneration Heyong Yin (DE)</p>		10 min
<p>S29.4 Influence of hypoxic environment on mesenchymal stem cell pro-angiogenic profile Lea Aubert (FR)</p>		10 min
<p>S29.5 Injectable human bone-forming cells derived from bone marrow MSCs display potent osteogenic properties to promote bone repair Delphine De Troy (BE)</p>		10 min
<p>S29.6 Macromolecular crowding in umbilical cord mesenchymal stem cell culture Shanshan Du (IE)</p>		10 min



Session 30: Clinical	14.00 – 15.30
Chairs: Betsy M. Nolan (US), Hans Jörg Meisel	Marina
<p>◆S30.1 Patient reported outcome measures in shoulder and elbow surgery: a guide for non-clinicians Betsy M. Nolan (US)</p> <p>◆S30.2 Is osteoarthritis a vascular disease? Roy Aaron (US)</p> <p>◆S30.3 The biology – Bone graft versus substitutes for spinal fusion Hans Jörg Meisel (DE)</p> <p>S30.4 Femoral shaft fractures: bone behaviour under high and low energy trauma in the paediatric, adult and older populations Ciaran Barlow (UK)</p>	<p>25 min</p> <p>25 min</p> <p>25 min</p> <p>10 min</p>
Coffee Break & Poster Session	15.30 – 16.00
Session 31: Bone	16.00 – 17.30
Chairs: Kelvin Yeung (HK), Sandra Hofmann (NL), Stefano Negri (IT)	Ballroom 1
<p>◆S31.1 Bone allograft with magnesium enriched tissue microenvironment promotes large bone defect healing Kelvin Yeung (HK)</p> <p>◆S31.2 Tissue engineering of bone - as close as we can get? Sandra Hofmann (NL)</p> <p>S31.3 Photopolymerization for filling porous ceramic matrix: improvement of mechanical properties and drug delivering behaviour Declan Devine (IE)</p> <p>S31.4 Cryostructured scaffolds for optimized rhBMP-2 delivery and bone regeneration Froilan Granero-Molto (ES)</p> <p>S31.5 Deterioration of trabecular microarchitecture occurs prior to alterations in mineral distribution in the tibia of an estrogen deficient rat model Laura O'Sullivan (IE)</p> <p>S31.6 Long-term outcome of acetabular revision with the Burch-Schneider cage and massive allografts in severe bone deficiencies Stefano Negri (IT)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Session 32: Mechanotransduction	16.00 – 17.30
Chairs: Martin Stoddart (CH), Vaida Glatt (US)	Ballroom 2
<p>◆S32.1 Influence of the mechanical environment in healing large bone defects and fractures Vaida Glatt (US)</p> <p>◆S32.2 Investigating chondrogenesis under multiaxial load Martin Stoddart (CH)</p>	<p>25 min</p> <p>25 min</p>



S32.3 Characterisation of leptin-receptor as a tool to study skeletal stem cell contributions to bone mechanoadaptation <i>in vivo</i> Gillian Johnson (IE)	10 min
S32.4 Differential stem cell cultivation on 3D printed PLGA scaffolds by means of dual fluidic high throughput bioreactors Kim Moeller (US)	10 min
S32.5 Macromolecular crowding and mechanical stimulation for control of tenogenic phenotype Diana Gaspar (IE)	10 min
S32.6 Sparc is a mechano-sensor that regulates tendon development and homeostasis Tao Wang (AU)	10 min
Session 33: Tendon	16.00 – 17.30
Chairs: Jay Dudhia (UK), Manuela E. Gomes (PT)	Ballroom 3
◆S33.1 Mesenchymal stem cell derived extracellular vesicles to modulate the tendon microenvironment in repair strategies Jay Dudhia (UK)	25 min
◆S33.2 Magnetic actuation in tissue engineering strategies targeting tendon regeneration Manuela E. Gomes (PT)	25 min
S33.3 Effect of TGF-β3 and GDF-5 on the expression of tendon / ligament markers in human dental pulp stem cells and periodontal ligament cells Dominika Berdecka (PT)	10 min
S33.4 RNA-Seq and meta-profiling for a better understanding of the musculoskeletal system biology Adrian Djalali-Cuevas (GR)	10 min
S33.5 Quantitative ultrasound measures in the patellar tendon are associated with visa-p scores of collegiate basketball players over one season of play Ogonna Kenechi Nwawka (US)	10 min
S33.6 Extensor tendon anatomy: attachment of the central tendon to the dorsum of the proximal phalanx shaft Lauren Mercer (US)	10 min
Session 34: Elbow & Shoulder	16.00 – 17.30
Chairs: Jorge Orbay (US), Nathan Hoekzema (US), Kishan Jethwa (UK)	Veranda
◆S34.1 Current concepts in the management of traumatic elbow instability Jorge Orbay (US)	25 min
◆S34.2 Distal humerus ORIF in 2018; tips and tricks to optimizing outcomes Nathan Hoekzema (US)	25 min
S34.3 Non-operatively managed paediatric supracondylar fractures of the humerus: do they all need “close” radiographic follow-up? Kishan Jethwa (UK)	10 min



S34.4 Synthetic augmentation for massive rotator cuff tears Adham Juhdi (IE)	10 min
S34.5 Loss of microRNA-29a aggravates subacromial bursa fibrosis: a new insight into pathogenesis of rotator cuff lesion with shoulder stiffness Tsai-Chen Tsai (TW)	10 min
S34.6 A novel collagen scaffold for augmenting rotator cuff repair – an <i>in vivo</i> rat study Mark Zhu (NZ)	10 min
Session 35: Electromagnetic Energy & Electrospinning	16.00 – 17.30
Chairs: Ruggero Cadossi (IT), Roy Aaron (US)	Marina
◆S35.1 Adenosine receptors as a biological pathway for the anti-inflammatory and beneficial effects of low frequency low energy pulsed electromagnetic fields Ruggero Cadossi (IT)	25 min
◆S35.2 Electrospinning applications in orthopaedic procedures Marco Thio (UK)	25 min
S35.3 Effects of electromagnetic fields on articular cells and osteoarthritis Jennifer Racine (US)	10 min
S35.4 Pulsed electromagnetic fields modulate metabolic activity, myokine release and differentiation into myotubes of myoblasts grown in vitro Federica F. Masieri (UK)	10 min
S35.5 Mediating human stem cell behaviour via defined fibrous architectures by melt electrospinning writing Kian Eichholz (IE)	10 min
S35.6 A co-culture model for the study of osteogenesis on scaffolds fabricated using melt electrospinning writing technique Andreas Hammerl (DE)	10 min
Coffee Break & Poster Session	17.30 – 18.00
Science Foundation Ireland (SFI) Plenary Session 1	18.00 – 19.30
Chair: Abhay Pandit (IE)	Ballroom 1 - 3
▲ PS1.1 Cancer, bone, muscle and metabolism: what's the connection? Theresa A. Guise (US)	45 min
▲ PS1.2 Novel tissue engineering and regenerative medicine approaches to heal musculoskeletal tissues and their relevance to orthopaedics Rui L. Reis (PT)	45 min
Meet the Mentor at the Pub: An Púcán	20.00 – 23.00



◆ Invited Speaker ▲ Plenary speaker

Thursday, 27th of September 2018

Session 36: Osteoarthritis	09.00 – 10.30
Chairs: Gun-Il Im (KR), Geraldine McCarthy (IE)	Ballroom 1
◆ S36.1 Kartogenin-based intra-articular therapeutics to treat osteoarthritis Gun-Il Im (KR)	25 min
◆ S36.2 Calcium-containing crystals – a potential therapeutic target in osteoarthritis Geraldine McCarthy (IE)	25 min
S36.3 Epigenetic drugs as potent modulators in osteoarthritis Namrata Madhusudan (UK)	10 min
S36.4 Determination of the role of neuronal interleukin-16 in the mechanism of calcification that occurs during progression of osteoarthritis using CRISPR Claire Dooley (IE)	10 min
S36.5 The influence of body mass index on microstructural and pathological changes in osteochondral unit of osteoarthritic tibia plateaus Lianzhi Chen (AU)	10 min
S36.6 A randomised control trial of intra articular injectates in knee osteoarthritis: results of corticosteroid versus NSAID injections Sean Flynn (IE)	10 min
Session 37: Biomechanics & Knee	09.00 – 10.30
Chairs: Thomas Grupp (DE), Nikolaos Diakakis (GR), Maurice T.A. Griffin (UK)	Ballroom 2
◆ S37.1 Advanced biomechanical testing – examples from the field of orthopaedic device modularities & cemented implant fixation in knee arthroplasty Thomas Grupp (DE)	25 min
◆ S37.2 Is synovial fluid a mirror of equine joint pathophysiology? Review of the tribological identity of equine synovial fluid Nikolaos Diakakis (GR)	25 min
S37.3 Cartilage contact pressure in the knee in the presence of a focal defect Mariska Wesseling (BE)	10 min
S37.4 <i>In vivo</i> kinematic analysis after total knee arthroplasty; comparison between intra- and post-operative measurements Toshitaka Fujito (JP)	10 min
S37.5 Variation in early functional outcome measurements following total knee arthroplasty Maurice T.A. Griffin (UK)	10 min
S37.6 Poor accuracy in diagnosis of common knee conditions, highlighting the inherent weakness of the medical model and algorithms Sunny Deo (UK)	10 min



Session 38: Biomaterials	09.00 – 10.30
Chairs: Donghui Zhu (US), Tolou Shokuhfar (US), Melika Sarem (DE)	Ballroom 3
◆S38.1 Being a good guest: the host implant paradigm Abhay Pandit (IE)	25 min
◆S38.2 Biomaterials for regenerative and translational medicine Donghui Zhu (US)	25 min
S38.3 Effects of processing conditions on hierarchical features of collagen-based substrates for medical devices Alberta Terzi (IT/IE)	10 min
S38.4 Controlled release of biological factors for progenitor cell-mediated endogenous repair of intervertebral discs Leslie Frapin (FR)	10 min
S38.5 Development of multicompartiment collagen devices for controlled and synergistic dual delivery João Quintas Coentro (IE)	10 min
S38.6 High resolution 3D printing of collagen Rory Gibney (BE)	10 min
Session 39: Infection	09.00 – 10.30
Chairs: Gerald J. Atkins (AU), Edward Greenfield (US)	Veranda
◆S39.1 Osteocytes and periprosthetic joint infection Gerald J. Atkins (AU)	25 min
◆S39.2 Do bacteria contribute to aseptic loosening of orthopaedic implants? Edward Greenfield (US)	25 min
S39.2 Collagen scaffolds functionalised with copper-eluting bioactive glass for the treatment of infection and regeneration of vascularised bone Emily J. Ryan (IE)	10 min
S39.3 Induction heating for decreasing bacterial load of staphylococcus epidermidis from biofilm: <i>in vitro</i> results Bart Pijls (NL)	10 min
S39.4 Cutibacterium acnes isolated from bone prosthesis vs skin: difference in virulent behaviour Fany Reffuveille (FR)	10 min
S39.5 Comparison of different antibiotic prophylaxis regimens in the risk of revision for infection following primary joint arthroplasty of the hip and knee in the Netherlands Ashley Blom (UK)	10 min



Session 40: Clinical	09.00 – 10.30
Chairs: James P. Waddell (CA), Richie H.S. Gill (UK)	Marina
<p>◆S40.1 Clinical trials on bearing surfaces in total hip replacement James P. Waddell (CA)</p> <p>◆S40.2 Metal-on-metal hip failures: why did this happen? Richie H.S. Gill (UK)</p> <p>S40.3 Efficacy and procedure survival of metal-on-metal hip resurfacing in patients aged less than 50 years: a prospective observational cohort study with minimum ten-year follow-up Lawrence Kohan (AU)</p> <p>S40.4 Hip joint synovial fluid bone resorption markers in subchondral insufficiency fracture of the femoral head Yusuke Kubo (JP)</p> <p>S40.5 Improving the who five steps to safer surgery bundle: enhancing quality for better outcomes Benjamin Hardy (UK)</p> <p>S40.6 Primary total hip replacement: Irish registry data for fixation methods and bearing options at a minimum of 10 years Gerard A. Sheridan (IE)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Coffee Break & Poster Session	10.30 – 11.00
Session 41: Cartilage	11.00 – 13.00
Chairs: Fintan Shannon (IE), Sylvia Nürnberger (AT)	Ballroom 1
<p>◆S41.1 Clinical state of the articular cartilage repair Tim Spalding (UK)</p> <p>◆S41.2 Cell strategies for cartilage repair Frank Barry (IE)</p> <p>◆S41.3 Cartilage as biomaterial for tissue engineering - solutions for repopulation of dense matrixes Sylvia Nürnberger (AT)</p> <p>S41.4 Extruded perfusion bioreactor: a versatile custom-made platform to study shear stress in cartilage tissue engineered constructs Joao Silva (US)</p> <p>S41.5 Reinforced collagen-GAG scaffolds for cartilage repair using 3D printed polymers Mark Lemoine (IE)</p> <p>S41.6 Chondrocytes from patients with familial osteochondritis dissecans exhibit an ER stress response and defective matrix assembly Maojia Xu (IE)</p> <p>S41.7 A five-year review of the outcomes of talar osteochondral lesions treated with matrix associated stem cell transplantation Evelyn Patricia Murphy (IE)</p>	<p>25 min</p> <p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>



Session 42: Biomechanics		11.00 – 13.00
Chairs: Paul Beaulé (CA), Danilo S. Catelli (CA)		Ballroom 2
◆S42.1 The effect of surgical approach and implant design on gait analysis after total hip replacement Paul Beaulé (CA)		25 min
◆S42.2 Free-energy analysis of cell spreading on ligand-coated elastic substrates Patrick McGarry (IE)		25 min
S42.3 Hip muscle and contact forces in post-surgical CAM FAI during gait Danilo S. Catelli (CA)		10 min
S42.4 Discerning the effect of substrate directed differentiation on mesenchymal stromal cell metabolic activity using FLIM Michael Monaghan (IE)		10 min
S42.5 Comparison of the biomechanical stability among intramedullary nail, compression plate, and external fixator used for atrophic non-union model Murtadhah Jalal (UK)		10 min
S42.6 Viscoelastic micro-mechanical characterisation of (bio)materials: an application to the osteochondral interface Jakob Pyszkowski (NL)		10 min
S42.7 Mechanobiological responses of osteoblasts in 3D hydrogel under estrogen withdrawal and mechanical stimulation Syeda Masooma Naqvi (IE)		10 min
S42.8 Mineral heterogeneity is altered in the femoral heads of osteoporotic and diabetic human patients Eoin Parle (IE)		10 min
S42.9 Pull out strength of suture anchor fixation in different anchor intervals Jungyu Moon (KR)		10 min
Session 43: Tendon		11.00 – 13.00
Chairs: Jess G. Snedeker (CH), Chunfeng Zhao (US), Manuel Delgado Caceres (DE)		Ballroom 3
◆S43.1 Cellular activation of tendon repair by collagen matrix damage Jess G. Snedeker (CH)		25 min
◆S43.2 Engineered tendon complex for rotator cuff repair and regeneration Chunfeng Zhao (US)		25 min
S43.3 Knockout mouse models: tools for deciphering tendon biology Manuel Delgado Caceres (DE)		10 min
S43.4 Scaffold-free approach in tendon engineering Zexing Yan (DE)		10 min



S43.5 Tenogenic differentiation protocol in xenogenic-free media enhances tendon-related marker expression in ASCs Deborah Stanco (IT)	10 min
S43.6 Development of serum-free culture conditions for differentiation of bone marrow-derived mesenchymal stromal cells to tenocyte-like cells Alessandro Dei (IE)	10 min
S43.7 Reconstruction of rat supraspinatus tendon injury with synthetic scaffold – experimental study Maciej Breborowicz (PL)	10 min
S43.8 Engineering optimal culture conditions to maintain tenogenic phenotype Andrea Rampin (GR/IE)	10 min
S43.9 Longitudinal changes in patellar tendon T2*-metrics are associated with tendon degeneration and symptom onset within collegiate basketball players over one season of play Erin Argentieri (US)	10 min
Session 44: Fracture	11.00 – 13.00
Chairs: Deana Mercer (US), Robert Gray (US)	Veranda
◆S44.1 Avoiding complications in distal radius fracture fixation Deana Mercer (US)	25 min
◆S44.2 Complex distal radius fractures Robert Gray (US)	25 min
S44.3 Investigating the impact of diabetes mellitus on the outcomes of hip fracture surgery Adam Galbraith (IE)	10 min
S44.4 Displaced intracapsular hip fracture in patients younger than 65: does fixation technique matter? Shai Factor (IL)	10 min
S44.5 The medium-term survivorship of patients with peri-prosthetic fractures around total knee arthroplasty, surgically managed with peri-articular locking plates David Jones (UK)	10 min
S44.6 Characterization of macrophage subtypes during the acute inflammatory phase of fracture healing Jessica A Cottrell (US)	10 min
S44.7 Endogenous mobilisation of stem cells with AMD3100 to treat non-union Richard Meeson (UK)	10 min
S44.8 3D printed custom-made talus prosthesis coupled with total ankle arthroplasty: the evolution of biomaterials and technology Elena Samaila (IT)	10 min



Session 45: Clinical	11.00 – 13.00
Chairs: David Hamilton (UK), Karlmeinrad Giesinger (CH)	Marina
◆ S45.1 The role of physiotherapy in knee replacement David Hamilton (UK)	25 min
◆ S45.2 Bone regeneration of unmet need in large, lateral-located osteonecrotic lesion of femoral head Shin-Yoon Kim (KR)	25 min
S45.3 7-year outcomes of the triathlon knee replacement: a cohort study Vikki Wylde (UK)	10 min
S45.4 The minimally-invasive modified percutaneous technique versus distal chevron osteotomy in the treatment of hallux valgus: a parallel-group, prospective randomised trial Omar Hadidi (IE)	10 min
S45.5 Leg-length restoration in primary total hip arthroplasty using a multimodal protocol: a series of 50 consecutive patients Ken Weixing Ho (UK)	10 min
S45.6 The use of neck modularity in THA: a retrospective study on 1,033 implants with a maximum follow-up of 15 years Corrado Ciatti (IT)	10 min
S45.7 Outcomes following orthopaedic surgical wound closure with suture compared with non-absorbable staples in adults. A systematic review and meta-analysis Paula McQuail (IE)	10 min
S45.8 Application of the Ottawa rules in an accident and emergency department Amjad Burgan (UK)	10 min
S45.9 Utilization of pre-operative ultrasound to delineate zone of nerve injury Brooke Baker (US)	10 min
Lunch Break	13.00 – 14.00
Session 46: Smart & Stimuli Responsive Materials	14.00 – 15.30
Chairs: Donata Iandolo (UK), Senentxu Lancers-Mendez (ES)	Ballroom 1
◆ S46.1 Electromechanical microenvironments for novel tissue engineering strategies Senentxu Lancers-Mendez (ES)	25 min
◆ S46.2 Smart biomaterials in musculoskeletal tissue engineering Yury Rochev (IE)	25 min
S46.3 <i>In vitro</i> 3D model for bone tissue: a bioelectronics approach Donata Iandolo (UK)	10 min
S46.4 Near infrared-responsive hydrogels for the spatiotemporal control of bone morphogenetic protein 2 bioavailability in critical-sized bone defects Francisco Martin-Saavedra (ES)	10 min



S46.5 Biocompatibility and biodistribution of magnetic silica nanoparticles for implant directed magnetic drug targeting Nina Angrisani (DE)	10 min
S46.6 Thermoresponsive nanofibers for engineering extracellular matrix-rich tissue substitutes Andrea de Pieri (IE)	10 min
Session 47: Biomechanics	14.00 – 15.30
Chairs: Mitsugu Todo (JP), Yutaka Inaba (JP)	Ballroom 2
◆S47.1 Assessment of vertebra strength using CT-image based finite element method Mitsugu Todo (JP)	25 min
◆S47.2 Evaluation of the effect of hip surgeries using finite element analysis Yutaka Inaba (JP)	25 min
S47.3 Alteration of intraarticular stress distribution after Latarjet procedure: a simulation study using 3D finite element method Hirotaka Sano (JP)	10 min
S47.4 Mechanics of a smith's fracture caused by falling on the palm of the hand Yusuke Matsuura (JP)	10 min
S47.5 Comparison of biomechanical evaluations between extramedullary and intramedullary reductions in unstable intertrochanteric fracture fixation with intramedullary nailing Tadashi Kawamura (JP)	10 min
S47.6 The posterior acetabular uptake (Contre-Coup lesion) by 18F-fluoride PET/CT in FAI syndrome cases Takayuki Oishi (JP)	10 min
Session 48: Spine	14.00 – 15.30
Chairs: Qing-Jun Meng (UK), Jerome Guicheux (FR), Emily Growney Kalaf (IE)	Ballroom 3
◆S48.1 Circadian rhythms in the musculoskeletal system: implications in health and disease Qing-Jun Meng (UK)	25 min
◆S48.2 Stem cells and biomaterials for the regenerative medicine of intervertebral disc: when developmental biologists meet tissue engineers Jerome Guicheux (FR)	25 min
◆S48.3 Cellular senescence in intervertebral disc degeneration is associated with DNA damage and cytoplasmic DNA Christine Le Maitre (UK)	25 min
S48.4 Investigating trophic factor expression in patient matched adipose & bone-marrow derived mesenchymal stem cells in response to inflammatory cytokines: implications for intervertebral disc regenerative therapies Abbie Binch (IE)	10 min



S48.5 Optimisation of a combined adipose stem cell-GDF6 therapy for intervertebral disc regeneration Frankie Wignall (UK)	10 min
Session 49: Infection	14.00 – 15.30
Chairs: (CH), Mario Morgenstern (CH), Gabriela Graziani (IT)	Veranda
◆S49.1 The Clinical reality of preventing, diagnosing and treating fracture-related infections (FRI): focus on biomaterials for antibiotic delivery Mario Morgenstern (CH)	25 min
◆S49.2 The design and preclinical evaluation of antibiotic releasing biomaterials Fintan Moriarty (CH)	25 min
S49.3 Heat stability of the antimicrobial activity of antibiotics after high temperature exposure Elyarbek Tashmetov (KZ)	10 min
S49.4 Novel antibacterial silver-based nanocoatings for biomedical devices Gabriela Graziani (IT)	10 min
S49.5 Metallurgical gallium additions demonstrate a strong time-increasing antibacterial activity without any cellular toxicity Michael Gasik (FI)	10 min
S49.6 Cell death and IL-1β release induced by TI particles depends on lysosomal membrane disruption Brian Fort (US)	10 min
Session 50: Biomaterials	14.00 – 15.30
Chairs: Manus Biggs (IE), Matthew Dalby (UK)	Marina
◆S50.1 Engineering microenvironments for regeneration of bone critical size defects using highly efficiency presentation of BMP-2 Manuel Salmeron-Sanchez (UK)	25 min
◆S50.2 The functional response of mesenchymal stem cells to electron-beam patterned elastomeric surfaces presenting micron to nanoscale heterogeneous rigidity Manus Biggs (IE)	25 min
S50.3 45S5 and 1393 bioactive glasses differentially regulate behaviour as well as angiogenic and osteogenic response of human MSCs Julia C. Berkmann (DE)	10 min
S50.4 Optimization of mesenchymal stem cell seeding on fibroin-coated microcarriers based on design of experiment approach Gaia Lugano (IT)	10 min
S50.5 Bone inspired calcium phosphate/biopolymers coated membrane: a versatile tool for bone regeneration Marie Dubus (FR)	10 min



S50.6 Design and evaluation of electrospun structured polycaprolactone biomaterials for annulus fibrosus repair Maude Gluais (FR)	10 min
Coffee Break & Poster Session	15.30 – 16.00
Session 51: Pathophysiologies	16.00 – 17.20
Chairs: Nicola Baldini (IT), Chris Arts (NL)	Ballroom 1
◆S51.1 Tumor microenvironment and the behaviour of bone cancer Nicola Baldini (IT)	25 min
◆S51.2 Osteomyelitis treatment; options, results and level of evidence Chris Arts (NL)	25 min
S51.3 HDAC inhibitors synergize with standard-of-care map chemotherapeutics to block growth of osteosarcoma sarcospheres Leah Everitt (US)	10 min
S51.4 High rate of tibial debonding and failure in a modern knee replacement: a cause for concern David Keohane (IE)	10 min
S51.5 Profiles of monocyte subsets and synovial macrophage phenotypes during the course of osteoarthritis in the destabilisation of the medial meniscus mouse model Niamh Fahy (NL)	10 min
Session 52: Biomechanics	16.00 – 17.20
Chairs: K.C. Geoffrey Ng (UK), Ilse Jonkers (BE)	Ballroom 2
◆S52.1 Anatomical and functional parameters provide new insights into the pathomechanics of CAM FAI K.C. Geoffrey Ng (UK)	25 min
◆S52.2 Advanced musculoskeletal modelling using patient-specific data the next frontier in osteoarthritis prevention Ilse Jonkers (BE)	25 min
S52.3 <i>In vivo</i> kinematic comparison between Bi-cruciate stabilized and cruciate retaining TKA during deep knee bending Teruya Ishibashi (JP)	10 min
S52.4 <i>In vivo</i> three-dimensional kinematic comparison of normal knees between flexion activities and extension activities Kenichi Kono (JP)	10 min
S52.5 Mechanical versus kinematic alignment in total knee arthroplasty: does the bone density at the implant-tibia interface differ? Monil Karia (UK)	10 min

Session 53: Spine	16.00 – 17.20
Chairs: Abhay Pandit (IE), Judith Hoyland (UK), Abbie L.A. Binch	Ballroom 3
<p>◆S53.1 Enigma of nucleus pulposus cell metabolism Makarand Risbud (US)</p> <p>◆S53.2 Development of cell based regenerative therapies for intervertebral disc degeneration Judith Hoyland (UK)</p> <p>S53.3 Analogous <i>in vitro</i> model of MSC injection into intervertebral discs Emily Growney Kalaf (IE)</p> <p>S53.4 Histological analysis of bone regeneration with different doses of rhBMP-2 in an ovine lumbar interbody fusion model Christian Hohaus (DE)</p> <p>S53.5 Paravertebral injection of botulinum toxin-a reduces lumbar vertebral bone quality in a rat model Xuepeng Wang (CN)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Session 54: Infection	16.00 – 17.20
Chairs: Thomas Webster (US), Yupeng Chen (US)	Veranda
<p>◆S54.1 Fighting orthopaedic implant infections without antibiotics but with nanomedicine Thomas Webster (US)</p> <p>◆S54.2 Self-assembled nano-structures for RNA delivery against joint inflammation Yupeng Chen (US)</p> <p>S54.3 Influence of laser-structured surfaces on bacterial load of implant materials Janin Reifenrath (DE)</p> <p>S54.4 Effect of low intensity pulsed ultrasound therapy on staphylococcus aureus biofilms Jerry Tsang (UK)</p> <p>S54.5 Silver ion doped calcium phosphate-based ceramic (SILVERON®) coated external fixator pins for preventing implant related infection Nusret Kose (TR)</p>	<p>25 min</p> <p>25 min</p> <p>10 min</p> <p>10 min</p> <p>10 min</p>
Session 55: Turkish Orthopaedic Research Council	16.00 – 17.20
Chairs: Ahmet Karakasli (TR), Hasan Havitcioglu (TR)	Marina
<p>◆S55.1 A novel anatomical patellar plate for transverse patellar fracture - a biomechanical <i>in vitro</i> study Ahmet Karakasli (TR)</p> <p>◆S55.2 Current concepts in different scaffold materials and preparation methods for bone tissue engineering Hasan Havitcioglu (TR)</p>	<p>25 min</p> <p>25 min</p>



S55.3 Creating meniscus cell population with mesenchymal stem cells and differentiated cell cocktail Aylin Kara (TR)	10 min
S55.4 Effects of weak gluteal muscles and increased femoral offset on muscle activations and stresses on femur after total hip replacement Musa Güngörürler (TR)	10 min
S55.5 Preparation and characterization of novel polydimethylsiloxane cell substrates to enhance osteoblast behaviour <i>in vitro</i> Meftune Özgen Öztürk Öncel (TR)	10 min
Coffee Break	17.20 – 17.30
General Assembly	17.30 – 18.30
Break	18.30 – 18.45
Science Foundation Ireland (SFI) Plenary Session 2	18.45 – 19.30
Chair: Timothy O'Brien (IE)	Ballroom 1 - 3
▲ PS2.1 Regenerative engineering: opportunities in a new convergence field Cato T. Laurencin (US)	45 min
Get Together: Tribeton	20.00 – 24.00



◆ Invited Speaker ▲ Plenary speaker

Friday, 28th of September 2018

Session 56: Bone	09.00 – 10.30
Chairs: Fergal J. O'Brien (IE), Elisabeth Rosado Balmayor (US)	Ballroom 1
◆S56.1 Non-viral gene activated scaffolds for enhanced bone & cartilage repair Fergal J. O'Brien (IE)	25 min
◆S56.2 Transcript-Activated Matrix: Scaffold based delivery of mRNA for enhanced bone repair Elizabeth Rosado Balmayor (US)	25 min
◆S56.3 Manipulating bone metabolism - old drugs, new tricks Ciara Murphy (IE)	25 min
S56.4 <i>In-vivo</i> demonstration of the suitability of piezoelectric stimuli for tissue engineering Clarisse Ribeiro (PT)	10 min
Session 57: MSCs	09.00 – 10.30
Chairs: Catherine Le Visage (FR), David Hoey (IE), Arlyng Gonzalez Vasquez (IE)	Ballroom 2
◆S57.1 Mesenchymal stem cell encapsulation in alginate micro-particles for intra-articular injection in osteoarthritis Catherine Le Visage (FR)	25 min
◆S57.2 Loading-induced bone formation: a role for the skeletal stem cell primary cilium David Hoey (IE)	25 min
S57.3 Development of a novel quality assessment tool for mesenchymal stem cells Joan Fitzgerald (IE)	10 min
S57.4 Tenogenic differentiation of mesenchymal stem cells (MSCs): a co-culture approach Salomé Guillaumin (IE)	10 min
S57.5 Adipose mesenchymal stromal cells characteristics are differently modulated by osteoarthritic milieu Cristina Manferdini (IT)	10 min
S57.6 Development of a human <i>in vitro</i> model of the neuromuscular junction, using iPSC-derived motor neurons and 3D tissue engineering constructs Lucia Marani (UK)	10 min
Session 58: Clinical	09.00 – 10.30
Chairs: Boyko Gueorguiev (CH), John J. Carey (IE)	Ballroom 3
◆S58.1 The biological insights of distraction histogenesis and novel clinical applications Gang Li (HK)	25 min
◆S58.2 Why and how do locking plates fail? Boyko Gueorguiev (CH)	25 min



◆S58.3 Global burden of musculoskeletal diseases: a global crisis in need of funding John J. Carey (IE)	25 min
S58.4 Bioactivity of metal wear in a murine <i>in vivo</i> model Alexander Paulus (DE)	10 min
Session 59: Biophysical Cues	09.00 – 10.30
Chairs: Prasad Shastri (DE), Riccardo Gottardi (US)	Veranda
◆S59.1 Towards a biophysical framework for mesenchymal stem cells fate choices Prasad Shastri (DE)	25 min
◆S59.2 Engineering the shape and behaviour of mesenchymal stromal cells through biophysical cues Bernd Rolaufts (DE)	25 min
◆S59.3 3D osteochondral microphysiological systems: from cartilage-bone crosstalk, to screening regenerative approaches, to space research Riccardo Gottardi (US)	25 min
S59.4 Smart nanopatterning to design advanced bioactive interfaces for tissue regeneration Ana Fatima Civantos Fernández (US)	10 min
Session 60: Biomaterials	09.00 – 10.30
Chairs: Owen Clarkin (IE), Pierre Weiss (FR), Benjamin Egan (UK)	Marina
◆S60.1 The future of bioactive glasses in bone tissue engineering Owen Clarkin (IE)	25 min
◆S60.2 Silated hydrogels in bone regenerative medicine Pierre Weiss (FR)	25 min
S60.3 Developing and testing novel delivery systems for glutamate receptor antagonists for the treatment of joint pain and disease Benjamin Egan (UK)	10 min
S60.4 A novel injectable bone allogenic substitute for skeleton regenerative medicine Pierre Tournier (FR)	10 min
S60.5 Characterization of ovine collagen obtained from different times of hydrolysis Arely Leon-Lopez (MX/IE)	10 min
S60.6 Pro-angiogenic near infrared-responsive hydrogels for patterning the expression of therapeutic transgenes Nuria Vilaboa (ES)	10 min
Coffee Break	10.30 – 11.00



Session 61: Bone		11.00 – 13.00
Chairs: Laoise McNamara (IE), Sophie Cox (UK)		Ballroom 1
<p>◆S61.1 Multi-scale, multidisciplinary research into bone mechanobiology during normal physiology and osteoporosis to enhance bone regeneration and therapeutic approaches Laoise McNamara (IE)</p>		25 min
<p>◆S61.2 Characterisation and delivery of pro-osteogenic vesicles: a new acellular approach to bone tissue engineering? Sophie Cox (UK)</p>		25 min
<p>S61.3 Comparison of systemic and local administration of bisphosphonates in an animal bone defect model: the importance of local drug delivery Christina Perdikouri (SE)</p>		10 min
<p>S61.4 Estrogen depletion alters osteogenic differentiation and matrix production by mechanically stimulated osteoblasts <i>in vitro</i> Jessica Schiavi (IE)</p>		10 min
<p>S61.5 Endoplasmic reticulum mediates mitochondrial transfer in the osteocyte dendritic network Junjie J. Gao (AU)</p>		10 min
<p>S61.6 Effect of long-term nicotine exposure on bone mineral density Mehmet Gurdal (TR/IE)</p>		10 min
<p>S61.7 Post-traumatic osteonecrosis of the tibial plafond, a clinical entity to recognize. A case series and literature review Nuala McAuley (IE)</p>		10 min
<p>S61.8 Experimental study to investigate a potential model for improved osseointegration in sickle cell bone disease patients with avascular necrosis Akintunde George (UK)</p>		10 min
<p>S61.9 Restoring the superior bone healing capacity of children in adults by designing scaffold-based therapies that harness age-altered JNK3 activation in stem cells Arlyng Gonzalez-Vazquez (IE)</p>		10 min
Session 62: MSCs		11.00 – 13.00
Chairs: Frank Barry (IE), Christian Jorgensen (FR)		Ballroom 2
<p>◆S62.1 MSC based therapy for severe osteoarthritis of the knee: the ADIPOA experience Christian Jorgensen (FR)</p>		25 min
<p>◆S62.2 MSC/ASC safety and potency assays: where we stand? Louis Casteilla (FR)</p>		25 min
<p>S62.3 Switching of the pro-inflammatory profile of synovial osteoarthritic macrophages by adipose mesenchymal stromal cells Gina Lisignoli (IT)</p>		10 min
<p>S62.4 Exosomes and microparticles released by mesenchymal stem cells exert a chondroprotective effect in osteoarthritis Daniele Noel (FR)</p>		10 min



S62.5 Stimulation of calvarial bone healing with human bone marrow stromal cells versus inhibition with adipose tissue-derived stromal cells on nanostructured β-TCP-collagen Benedict Lotz (DE)	10 min
S62.6 The effect of bFGF and hypoxic pre-conditioning on CXCR4 and SDF-1 expression as targets for homing enhancement of canine AT-MSCs Ana Ivanovska (IT)	10 min
S62.7 Role of bone mineral phase in pathway choice for bone formation by human mesenchymal stem/stromal cells Melika Sarem (DE)	10 min
S62.8 Look at the future of cellular therapies - from the perspective of laboratory involved in development and clinical testing of ATIMP Malgorzata Lewandowska-Szumiel (PL)	10 min
S62.9 Immunomodulatory paracrine effect of immobilized mesenchymal stem cells in a hyaluronic acid hydrogel on chondrocytes <i>in vitro</i> Simon L. Mogensen (DK)	10 min
Session 63: Cartilage & Spine	11.00 – 13.00
Chairs: Hazel Fermor (UK), Sibylle Grad (CH)	Ballroom 3
◆S63.1 Early intervention therapies for cartilage lesion repair Hazel Fermor (UK)	25 min
◆S63.2 Pre-clinical testing of biological therapies for the intervertebral disc using whole organ bioreactors Sibylle Grad (CH)	25 min
S63.3 Weight-adaptive collagen-poly lactide scaffold in cartilage repair in a porcine model Eve Salenius (FI)	10 min
S63.4 The effect of priming on matrix accumulation and metabolism of stem cells and chondrocytes in altered intervertebral disc-like pH conditions Jennifer Gansau (IE)	10 min
S63.5 MicroRNA-29a alleviates osteophyte deposition and subchondral damage in knee osteoarthritis by reducing mineralization of chondrocytes Yi Chih Sun (TW)	10 min
S63.6 The glycomic profile of the intervertebral disc in health and degeneration for biomaterial functionalisation Kieran Joyce (IE)	10 min
S63.7 Osmoregulation of aquaporin 1 and 5 in nucleus pulposus cells Joseph Snuggs (UK)	10 min
S63.8 A hyaluronan-based hydrogel system for annulus fibrosus repair Büşra Günay (IE)	10 min
S63.9 Directing stem cell differentiation towards the chondrogenic lineage by xeno-free culture conditions and macromolecular crowding Stefanie Korntner (IE)	10 min



Session 64: Tendon & Ligament		11.00 – 13.00
Chairs: David Musson (NZ), Eithne J. Comerford (UK), Mark Fernandez Yagüe (IE)		Veranda
◆S64.1 The importance of matrix structure and stiffness for the mechanobiological behaviour of cells in the health and disease of tendons	David Musson (NZ)	25 min
◆S64.2 Ligament structure and function: how does it relate to disease?	Eithne J. Comerford (UK)	25 min
S64.3 Using mechanically loaded piezoelectric biomaterials to define the cell microenvironment	Marc Fernandez Yagüe (IE)	10 min
S64.4 Platelet lysate cell-laden hydrogel coated suture threads for tendon repair	Isabel Calejo (PT)	10 min
S64.5 Extensor tendon proximal phalanx dorsal shaft attachment contribution to finger extension	Christina Kurnik (US)	10 min
S64.6 Exploration of the lymphocyte population in midportion Achilles tendinopathy	Nando De Vulder (BE)	10 min
S64.7 Cellular changes in immortalized human anterior cruciate ligament-derived fibroblasts and its applicability for tissue engineering	Gundula Schulze-Tanzil (DE)	10 min
S64.8 Ultrasonography of the lateral ligament in ankle sprains	Karoline Bjerg Christensen & Torben Petersen (DK)	10 min
S64.9 The synergistic effect of topography and substrate rigidity in the development of a collagen scaffold for tendon tissue engineering	Ignacio Sallent (IE)	10 min
Session 65: Clinical		11.00 – 13.00
Chairs: David Hamilton (UK), Karlmeinrad Giesinger (CH)		Marina
◆S65.1 PROMS and change management	Colin Howie (UK)	25 min
◆S65.2 How to select and interpret patient-reported outcome measures?	Johannes M. Giesinger (AT)	25 min
◆S65.3 Boosting performance with ePRO (electronic patient-reported outcome)	Karlmeinrad Giesinger (CH)	25 min
S65.4 Insurance claims: whiplash-related injuries and how to avoid them	Kenneth Linton (IE)	10 min
S65.5 Tourniquet use does not affect functional outcomes or pain after total knee arthroplasty: a prospective, double-blinded, randomised trial	Seán Ó Murchú (IE)	10 min



S65.6 Are we evolving to a superior surgical technique for irreparable cuff tears? A cohort comparison of interposition grafting versus superior capsular reconstruction Maria Tennyson (UK)	10 min
S65.7 Introduction of a new predictor for success of treatment of neglected cases of DDH presented after the walking age Osama Elghobashy (IE)	10 min
Awards, Closing Ceremony & Lunch	13.00 – 14.00