



BORS 2025 Annual Meeting

8th & 9th September 2025

LT 2 - Teaching and Learning Building
University of Birmingham
Birmingham, B15 2TT

DAY 1	Monday 8th September
08:30	Registration Opens
09:00	Welcome
09:10	Keynote 1: Implementation Science – novel therapy to clinic and the community Prof Amy Grove (University of Birmingham)
09:40	Session 1: Bone Development
09:40-09:50	Dual-mode electromechanical stimulation enhances bone healing: Evidence from a double-blind, paired-limb study in an ovine model. Sasza Chyntara Nabilla
09:50-10:00	Nanovibrational stimulation as an intervention for the reversal of spinal cord injury-induced osteoporosis. Jonathan Williams
10:00-10:10	Investigating the Prioritisation of Phosphate Sources During Osteoblast Mineralisation: A Comparative In Vitro Study. Joseph Weightman
10:10-10:20	Dysregulated mTOR signalling is an intrinsic driver of osteoblast regulation in bone development during adolescent idiopathic scoliosis. Ellie Northall
10:20-10:30	Non-Contact Ultrasound Monitoring of Osseointegration in Femoral ITAP Orthopaedic Implants. Enze Chen
10:30	Coffee and Posters
11:00	Keynote 2: 3D Printing in Orthopaedic Oncology. Piya Kiatisevi (Lerdsin Hospital, Thailand)
11:30	Session 2: Additive Manufacture / Materials
11:30-11:40	Rapid design and testing of biologically active alloys through conventional and additively manufacturing techniques Sophie Cox



11:40-11:50	Additive Manufacture: An Alternative Approach to Orthopaedic Bone Models Benjamin Lovat
11:50-12:00	Biologically designed titanium alloys: enhancing antimicrobial efficacy through alloy design and processing Daisy Rabbitt
12:00-12:10	Blended Powder Alloying of Titanium-Tin (Ti-xSn) Alloys by Laser Powder-Bed Fusion: Venturing into the Lesser Used Elements for Biomedical Alloys Luke Carter
12:10-12:20	UK Metamaterials / Research Networks. Aaron Vance
12:20	Rapid Poster Presentations 1
12:40	Lunch and Posters
13:30	BORS Presidential Lecture: We are what we do... Proactive MSK Health. Prof Alison McGregor (Imperial College London)
14:20	Session 3: Implants
14:20-14:30	Biomimetic and biofunctionalised polymer implants to promote in situ repair of traumatic and early osteoarthritic cartilage defects Caroline Taylor
14:30-14:40	Pseudoarthrosis and Rod Breakage in Adult Spinal Deformity Surgery with Minimum 5-Year Follow-Up: Patterns, Predictors, and Machine Learning-Based Risk Analysis Chuck Lam
14:40-14:50	Design and Analysis of Porous Root Analogue Dental Implants with an Optimized Sine-wave Reducing Stress Structure Shielding: Comprehensive Numerical Study Churun Lin
14:50-15:00	Evaluation of Physicochemical Properties of P11-4 Titanium Coatings and Their Influence on Cell Viability. Dina Abdel Fattah
15:00-15:10	Blended Powder Alloying of Titanium-Tin (Ti-xSn) Alloys by Laser Powder-Bed Fusion: Venturing into the Lesser Used Elements for Biomedical Alloys Luke Carter
15:10	Rapid Poster Presentations 2
15:30	Coffee and Posters
16:00	Session 4: Soft Tissue / Surgical Technique
16:00-16:10	Percutaneous repair of the Achilles tendon with one knot offers equivalent results as the same procedure with two knots. Daryl Poku
16:10-16:20	Evaluation of tendon slippage measurement techniques in soft tissue fixation using crosshead displacement and digital image correlation. Jonathan Holt



16:20-16:30	Distinct Recovery Phenotypes Identified Following Anterior Cruciate Ligament Reconstruction Through Multivariate Clustering: Implications for Post-Traumatic Osteoarthritis Risk Stratification. Karl Morgan
16:30-16:40	Optimal Duration of Venous Thromboembolism Prophylaxis for Elective Total Hip Arthroplasty: A Bayesian Network Meta-Analysis of Efficacy and Safety. Zaina Gaddoura
16:40-16:50	Influence of pre-operative co-morbidities on pain and function outcomes at 1 year after primary total knee replacement. Sean Scattergood
18:00	BORS Public Lecture: Role of Innovation at Royal Orthopaedic Hospital and the Sarcoma Unit. Mr Lee Jeys (ROH)
19:30	Conference Dinner Edgbaston Park Hotel

DAY 2	Tuesday 9th September
08:30	Registration Opens
09:00	Keynote 3: The Integration of Computational and Experimental Advances in Multiscale Bone and Cartilage Mechanics. Prof Daniele Dini (Imperial College London)
09:30	Session 5: Models
09:30-09:40	Spatial shape analysis as a method for landmarking the paediatric femur when epiphysis is not visible. George Allison
09:40-09:50	Molecular investigations into the origin of osmotic pressure mediated residual stresses in bone. James Rowe
09:50-10:00	Reconstructing defected patellae using a Statistical Shape Modelling (SSM). Maria Moravidou
10:00-10:10	Quantifying trabecular bone through simulated assembly: The trabecular bone assembly index (Tb.AI). Jonathan Williams
10:20-10:30	An in vitro nociceptor predictive model of patient reported pain in osteoarthritis. Ryan Jones
10:20	Rapid Poster Presentation 3



10:30	Coffee and Posters
11:00	Industrial Perspective Panel – Translation Chair: Prof Michael Bryant Dr Saurabh Lal – Zimmer Biomet Ltd Prof Alicia El Haj – UoB & MICA Biosystems Andrew Naylor – 4D Medicine
12:00	Session 6: Patient Interaction
12:00-12:10	Wearable devices can improve physical activity and reduce pain in middle-aged adults with musculoskeletal chronic pain. Kereaseen Oluwatoboloba Eboreime
12:10-12:20	Implementing an automated method for registering MRI-derived bone models to biplane radiographs to calculate in-vivo tibiofemoral kinematics. Janine Flohr
12:20-12:30	Quantifying dynamic in-vivo lumbar spine kinematics using biplanar videoradiography and MRI. Katherine Prentice
12:30-12:40	Patient Perspectives on Recycling and Reuse of Orthopaedic Devices. Alex Starkey
12:40	Lunch and Posters (BORS AGM)
13:40	Keynote 5: Utilisation of synovial fluid biomarkers in translational orthopaedic research: Predicting outcome, elucidating differential response and indicating mechanism. Prof Karina Wright (Keele University)
14:10	Session 7: Cartilage
14:10-14:20	Comparative evaluation of chondrocyte viability and structural integrity in UK and US-sourced osteochondral allografts: Implications for transatlantic tissue transport. Tomas Link
14:20-14:30	Regional Cartilage Degeneration and Gene Expression Signatures in Human Knee Osteoarthritis: Insights into Compartment-Specific Molecular Pathology. Antonia Vogt
14:30-14:40	BMP9 induces zonal stratification and the appearance of Benninghoff's arcades in immature articular cartilage. Ilyas Khan
14:40-14:50	Optimising in-situ human chondrocyte viability for articular cartilage transplantation by chondroprotection; an ex-vivo experiment. Zaid Alturkistani
14:50-15:00	The responses of in situ chondrocytes and phenotype to mild in vitro cartilage scraping, foetal calf serum and hyper-osmolarity. Andrew Hall



15:00-15:10	A high-resolution spatial transcriptomic map of the developing human fetal spine. Christabel Dube
15:10	Coffee and Posters
15:40	Session 8: Imaging / Screening
15:40-15:50	Using nanopore sequencing to diagnose prosthetic joint infections: preliminary findings. Hollie Wilkinson
15:50-16:00	Dynamic radiomics with reconstructed healthy baseline of knee MRI analysis. Yaxi Chen
16:00-16:10	Employing micro-computed tomography to characterise surface adhered particles inherent to metal orthopaedic implant additive manufacturing Jacob Bracegirdle-Morais
16:10-16:20	Clinical risk thresholds based on image-based sarcopenia measures can stratify those at risk of post-operative complication following surgery for proximal femur fractures. Filip Brzeszczynski, David Hamilton
16:20-16:30	Inducing senescence in fibroblast-like synoviocytes for novel senolytic drug screening. William Cawley
16:30	Awards and Closing Ceremony