5th Joint Conference of the

Bone Research Society (BRS) and British Orthopaedic Research Society (BORS) School of Biosciences, Cardiff University, Cardiff CF10 3AX

4-6 September 2019

Wednesday 4	September 2019		
1200	Entrance Foyer, Ground Floor Registration desk opens		
1300-1500	Shared Lecture Theatre, 1 st Floor Mid-Career Development Workshop powered by the ORS Ambassadors Program Chairs: Sophie Williams (Leeds, UK) and Kassim Javaid (Oxford, UK)		
1300-1310	Introduction - Sophie Williams (Leeds, UK) and (Liverpool, UK)	Kassim Javaid (Oxford, UK), Simon Tew	
1310-1320	BRS strategy document – Kassim Javaid (Oxford	d, UK)	
1320-1350	Life as a mid-career researcher: what happened have changed - Amy Naylor (Birmingham, UK)	d, what I wish I had known and what I would	
1350-1410	My reflections on what makes a good mid-care	er researcher- Tim Arnett (London, UK)	
1410-1430	Results of BRS / BORS mid-career survey – Sophie Williams (Leeds, UK) and Kassim Javaid (Oxford, UK)		
1430-1450	What is the gap - a discussion		
1450-1500	Next Steps		
1500-1530	Seminar Room E1.22, 1 st Floor Refreshment break		
1530-1645	Shared Lecture Theatre, 1st Floor Muscle, Tendon and Bone Workshop		
1530-1555	Chairs: Alex Ireland (Manchester, UK) and Jole Tendon Structure, Function and Adaptation in I	•	
1555-1620	Making Connections: engineering hard-soft tissue interfaces – Jennifer Paxton (Edinburgh, UK)		
1620-1630	OC1, High tibial osteotomy (HTO) and wide stance (WS) gait reduces knee joint loading in individuals with varus knee deformity – Jake Bowd (Cardiff, UK)		
1630-1640	OC2, Which muscle parameters are longitudinally associated with knee osteoarthritis outcomes? Findings from the Hertfordshire Cohort Study – Nicholas Fuggle (Southampton, UK)		
1640 - 1645	General discussion		
1700-1830	The Lodge, Cardiff University Students' Union, Park Place	Large Chemistry Lecture Theatre, Cardiff University Main Building, Park Place 1730-1820 - Public Lecture	

New Investigator Evening – Round table 'Meet the Expert' Discussions:	Chairs: Elaine Dennison (Southampton, UK) and Mark Wilkinson (Sheffield, UK)
Organisers: Elizabeth Curtis (Southampton, UK), Hazel Fermor (Leeds, UK), Richard van Arkel (London, UK) and Dimitris Vlachopoulos (Exeter, UK) Small project grants Working in industry Clinical academic career Meet the editor / Getting published Bridging the gap Moving abroad for research Improving your online profile Translation pathways (quality management, identifying project partners) Basic science academic career	More than skin deep: how sunlight shapes our bodies and minds - Linda Geddes In conjunction with the BRS Neil MacKenzie Public Engagement award

Wednesday 4	September 2019 Continued/		
1845-2205	Temple of Peace, Cardiff CF10 3AP Rare Bone Diseases Workshop and Supper supported by Alexion, Kyowa Kirin and Mereo BioPharma Chairs: Kassim Javaid (Oxford, UK) and Ines Reichert (London, UK)	1900-2100	Physiology A Lecture Theatre, Ground Floor Biomechanics and Bioengineering Research Centre Versus Arthritis Workshop
1845-1910 1910-1915	Registration, supper and networking Introduction and setting the scene		'Interdisciplinary research in Osteoarthritis' Chairs: Ben Egan (Cardiff, UK) and Ilse Jonkers (Leuven, Belgium)
1915-2000	for rare bone diseases research in the UK – Kassim Javaid (Oxford, UK) Rare disease mechanistic insights to therapy - Brendan Lee (Houston, USA)	1900 – 1915 1915 – 1930	An engineer's perspective – Gemma Whatling (Cardiff, UK) A bio-engineer's perspective – Wayne Ayre (Cardiff, UK)
2000-2005	OC3, Ochronotic pigment distribution in alkaptonuric mice reveals that homogentisic acid deposition in tissues reflects the intensity of mechanical loading — Juliette Hughes (Liverpool, UK) OC4, Characterization of Pain in	1930 - 1945 1945 - 2000 2000 - 2100	A biologist's perspective - Sophie Gilbert (Cardiff, UK) An orthopaedic registrar's perspective - Alison Kinghorn (Cardiff, UK) Light buffet supper and networking (BIOSI Foyer)
2010-2015	Fibrous Dysplasia – Kassim Javaid (Oxford, UK) OC5, Novel use of Burosumab in refractory iron-induced FGF23 mediated hypophosphataemic osteomalacia – Raj Amarnani (Oxford, UK)		
2020-2030	Short break		

2030-2100	Unanswered orthopaedic issues when treating broken brittle bones - Fergal Monsell	
2100-2130	Rare OI phenotypes: why detailed phenotyping matters - Meena Balasubramanian	
2130-2200	The genetic epidemiology of acquired heterotopic ossification: Prospects for novel treatment strategies? - Mark Wilkinson (Sheffield, UK)	
2200-2205	LB1 , Imaging Fibrous Dysplasia of bone – Alan Boyde (London, UK)	

Thursday 5 Se	eptember 2019
0830	Entrance Foyer, Ground Floor Registration
0900-0915	Shared Lecture Theatre, 1 st Floor
	Welcome and opening remarks Bronwen Evans (Cardiff, UK) and Richie Gill (Bath, UK), Chairs of Organising Committee
	Professor Andrew Westwell, Dean of Research and Innovation, College of Biomedical & Life Sciences, Cardiff University
0915-1015	Shared Lecture Theatre, 1 st Floor Symposium 1: – Osteoarthritis
	Chairs: Bronwen Evans (Cardiff, UK) and Richie Gill (Bath, UK)
0915-0945	IS1, Comorbidities and Osteoarthritis - Fiona Watt (Oxford, UK)
0945-1015	IS2, Novel strategies in regenerative medicine for musculoskeletal disease - Andrew McCaskie (Cambridge, UK)
1015-1055	Shared Lecture Theatre, 1 st Floor Oral communications – OA theme
	Chairs: Clare Brockett (Leeds, UK) and Dimitris Vlachopoulos (Exeter, UK)
1015-1025	OC6, Mutations in osteoarthritis susceptibility genes cause functional changes in zebrafish joints that lead to altered load and disease pathology – Chrissy Hammond (Bristol, UK)
1025-1035	OC7, Preclinical diabetes accelerates onset of Osteoarthritis - lessons from model system - Samuel Joshua Pragasam (Hyderabad, India)
1035-1045	OC8, Bi-Unicondylar Arthroplasty preserves the Anterior Cruciate Ligament, retaining near-normal anteroposterior stability in the treatment of medial and lateral tibiofemoral arthrosis – Oliver Dandridge (London, UK)
1045-1055	OC9, Individuals with high bone mass have increased clinical and radiographic progression of knee osteoarthritis independent of fat mass April Hartley, (Bristol, UK)
1055-1155	Entrance Foyer area and CO.13, Ground Floor

	and
	Seminar room E1.22, 1 st Floor
	Refreshments, Exhibition and Poster viewing (odd numbered posters)
1155-1225	Shared Lecture Theatre, 1 st Floor Plenary lecture Chairs: Jim Gallagher (Liverpool, UK) and Ines Reichert (London, UK)
	IS3 - New therapeutic approaches to OA, Brendan Lee (Houston, USA)

Thursday 5 S	eptember 2019 Continued/
1225-1245	Shared Lecture Theatre, 1 st Floor
	Poster Pitching
	Chairs: Jim Gallagher (Liverpool, UK) and Ines Reichert (London, UK)
	PP1, High tibial osteotomy (HTO) and wide stance (WS) gait reduces knee joint loading in individuals with varus knee deformity - Jake Bowd (Cardiff, UK)
	PP2, Which muscle parameters are longitudinally associated with knee osteoarthritis outcomes? Findings from the Hertfordshire Cohort Study - Nicholas Fuggle (Southampton, UK)
	PP3, Ochronotic pigment distribution in alkaptonuric mice reveals that homogentisic acid deposition in tissues reflects the intensity of mechanical loading - Juliette Hughes (Liverpool, UK)
	PP4, Osteoblast-specific Enpp1 deficiency promotes bone mass whilst worsening the metabolic phenotype - Fiona Roberts (Oxford, UK)
	PP5 , Associations between chondrocyte transiency and osteoarthritis pathology - Hasmik Jasmine Samvelyan (Edinburgh, UK)
	PP6 , Barbara Mawer Travelling fellowship: Associations between endocrine metabolites and bone mineral density in children aged 6-8 years: the PANIC study - Dimitris Vlachopoulos (Exeter, UK)
	PP7, Determinants of bone mineral content and density in children aged 6-8 years: the PANIC study - Annie Constable (Exeter, UK)
	PP8, Does screening for high hip fracture risk reduce fractures by modifying falls risk? A post hoc analysis from the SCOOP study - Eugene McCloskey (Sheffield, UK)
	PP9, The Effect of Bone Quality on the Time Dependant Response of Human Trabecular Bone at Physiological Levels of Strain - Robert Wallace (Edinburgh, UK)
	PP10, New therapeutic avenues in bone repair: harnessing a novel endogenous molecule to boost bone and prevent bone loss in inflammatory disease - Jonathan Lewis (Birmingham, UK)
	PP11, Do sex hormones determine sexual dimorphism of the bone vasculature? Alice Goring (Southampton, UK)
1245-1345	Entrance Foyer area, Ground Floor
	and
	Seminar room E1.22, 1 st Floor
	Lunch and Exhibition

	13:00 Shared Lecture Theatre, 1st Floor BRS Annual General Meeting	13:00 Physiology B Lecture Theatre, Basement BORS Annual General Meeting	
1345-1440	Shared Lecture Theatre, 1 st Floor Sponsored Symposium – UCB Chair: Mike Stone (Cardiff, UK)		
1345-1355	Clinical tools to assist goal-directed therapy for fragility and fracture patients – Mike Stone (Cardiff, UK)		
1355-1415	Mass vs strength: Which measurement can help guide my patients' therapy – Beth Curtis (Southampton, UK)		
1415-14.35	How do bone cells translate drug effects into bone strength? – Jon Tobias (Bristol, UK)		
1435-1440	Looking to the future – Mike Stone, Beth Curtis and Jon Tobias		

Thursday 5 September 2019 Continued/			
1445-1545	Shared Lecture Theatre, 1st Floor	Physiology I	B Lecture Theatre, Basement
	OATech+ Symposium	Oral comm	unications - Basic
	supported by OATech+	Chairs: Andrew Chantry (Sheffield, UK) a	
	Chairs: Sophie Gilbert (Cardiff, UK) and Sabina Gheduzzi (Bath, UK)	Isabel Orris 1445-1455	s (London, UK) OC10, Systemic Teriparatide
1445-1515	IS5, OA – where movement modelling meets biology - Ilse Jonkers (Leuven, Belgium)	1443-1433	with Locally Injected Mesenchymal Stem Cells Synergistically Enhances Fracture Healing – Liza Osagie
1515-1525	IS4, OATech+ EPSRC Network plus funding update - Cathy Holt (Cardiff, UK)		(London, UK)
1525-1545	IS6, Imaging OA – technology challenges and opportunities - David Williams (Cardiff, UK)	1455-1505	OP11, Predicting cortical bone adaptation in the mouse tibia: a longitudinal study – Vee San Cheong (Sheffield, UK)
		1505-1515	OC12, The secretome of mesenchymal stromal cells drives functional heterogeneity – Andrew Stone (York, UK)
		1515-1525	OC13, Analysis of osteoclastic resorption in vitro reveals new pathways of bone collagen breakdown and novel markers of bone resorption in vitro and in vivo – Brendan Norman (Liverpool, UK)
		1525-1535	OC14, Understanding the role of L-cysteine and hydrogen sulphide in the beneficial effects of N-acetylcysteine on bone formation and arterial medial calcification – Lucie Bourne (London, UK)

		1535-1545	OC15, TightRight: augmenting screwdrivers to reduce bone stripping rates and optimise tightness when inserting non-locking screws – James Fletcher (Bath, UK)
1545–1605	Entrance Foyer area, Ground Floor		
	and		
	Seminar room E1.22, 1 st Floor		
	Refreshments, Exhibition and Poster viewing		

Thursday 5 September 2019 Continued/			
1605-1705	John Pryde Lecture Theatre, Basement Symposium 2: - Epigenetics Chairs: Elizabeth Curtis (Southampton, UK) and Debbie Mason (Cardiff, UK)	Physiology B Lecture Theatre, Basement Symposium 3: - Epidemiology and Health Services Research supported by National Joint Registry for England and Wales	
		Chairs: Kassim Javaid (Oxford, UK) and Andrew McCaskie (Cambridge, UK)	
1605-1635 1635-1705	IS7, What has DNA methylation analysis told us about OA? Louise Reynard (Newcastle, UK) IS8, microRNA biomarkers: new diagnostic and prognostic tools for bone diseases - Matthias Hackl (Vienna, Austria)	IS9, Patient reported outcome measures in musculoskeletal disease - How can they inform decision-making? Ola Rolfson (Gothenburg, Sweden)	
		IS10, A global perspective on adolescent growth and healthy musculoskeletal ageing - Kate Ward (Southampton, UK)	
1705-1715	Break	,	
1715-1745	This meeting has been sponsored by Gedeon Richter, who have paid exhibition stand fees and speaker fees for the sponsored symposium on 05/09/19 [Professor Mike Stone]. Gedeon Richter had no involvement in, or influence over, the content of the rest of the meeting.		
	Shared Lecture Theatre, 1 st Floor Sponsored Symposium – Gedeon Richter Chairs: Elaine Dennison (Southampton, UK) and Bridget Scammell (Nottingham, UK)		
	Building a better future: improving access to osteoporosis patients - Mike Stone (Cardiff,	•	
1745-1830	Shared Lecture Theatre, 1 st Floor Debate supported by MiLabs		
	Chairs: Bronwen Evans (Cardiff, UK) and Ma	rk Wilkinson (Sheffield, UK)	
	This house believes that if it doesn't hurt it isn't a disease:		
	IS13, For the motion; Chris Little (Sydney, Au		
	IS14, Against the motion; Alison Gartland (S	hettield, UK)	
1900-0000	Conference Dinner – National Museum Card	iff	

Friday 6 Septe	mber 2019
0800	Entrance Foyer, Ground Floor Registration
0830-0930	Shared Lecture Theatre, 1 st Floor Symposium 4: Cancer and Bone
	Chairs: Michelle Lawson (Sheffield, UK) and Debbie Mason (Cardiff, UK)
0830-0900	IS15, Endogenous production of IL-1B by breast cancer cells drives metastasis and colonisation of the bone microenvironment - Penny Ottewell (Sheffield, UK)
0900-0930	IS16, Bones, Groans and Lumps: Improving Outcomes in Orthopaedic Oncology Mike Parry (Birmingham, UK)
0930-1000	Shared Lecture Theatre, 1 st Floor Poster pitching
	Chairs: Michelle Lawson (Sheffield, UK) and Debbie Mason (Cardiff, UK)
	PP12, Evaluating strength of 3D printed screw threads for patient-specific osteosynthesis plates - Alisdair MacLeod (Bath, UK)
	PP13, What is the optimum tightness for non-locking cortical screws, and how can this be predicted prior to insertion? - James Fletcher (Bath, UK)
	PP14, Genome-wide Expression Analysis of Human Osteoclasts Following Clinically Relevant Cobalt and Chromium Exposure - Karan Shah (Sheffield, UK)
	PP15, How does body weight influence the risk of vertebral fracture?- Jin Luo (London, UK)
	PP16, Accelerated osteogenesis in vivo and in vitro achieved through metabolic and secretomic modification in mesenchymal stromal cells - Alasdair Kay (York, UK)
	PP17, Higher birthweight is associated with greater limb muscle mass and grip strength in middle age: findings from the UK Biobank Imaging Enhancement - Elizabeth Curtis (Southampton, UK)
	PP18, Measuring prosthesis migration using a novel ultra-kow dose CT-based method - Kartik Logishetty (London, UK)
	PP19, Pharmacokinetics of parathyroid hormone peptide PTH 1-34 via nasal spray for the treatment of osteoporosis - Richard Pearson (Nottingham, UK)
	PP20, The influence of the RNA binding protein HuR on skeletal development is not mediated through the control of mesenchymal cell differentiation - Simon Tew (Liverpool, UK)
	PP21 , Investigating the regulation of bone mineralisation through in vitro and in vivo models of chronic kidney disease - Shun-Neng Hsu (Edinburgh, UK)
	PP22, Changes in gait, knee loading and patient reported outcomes following High Tibial Osteotomy - Gemma Whatling (Cardiff, UK)
	PP23 , An in vitro assessment of knee kinematics following radial tears of the medial meniscus - Fahd Mahmood (Glasgow, UK)
	PP24, Correlations between Radiographic Classification Systems and Confirmed Cartilage Loss in Severe Knee Osteoarthritis - Oisin Keenan (Edinburgh, UK)
	PP25, Impact of renal function on response to oral and i.v. bisphosphonate treatment: Real world observational data using linkage to national registers - Bo Abrahamsen (Odense, Denmark)
	PP26, A tale of two phosphatases: how do matrix vesicles generate phosphate for bone mineralization? - Scott Dillon (Edinburgh, UK)
	LBPP1, Fleas and bites in bones – Alan Boyde (London, UK)

1000-1100	Entrance Foyer area and CO.13, Ground Floor	
	and	
	Seminar room E1.22, 1 st Floor	
	Refreshments, Exhibition and Poster viewing (even numbered posters)	
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Friday 6 Septe	Friday 6 September 2019 Continued/					
1100–1200	John Pryde Lecture Theatre, Basement Oral communications - Clinical Chairs: Elizabeth Curtis (Southampton, UK) and Chris Wilson (Cardiff, UK)	Physiology B Lecture Theatre, Basement Oral communications - Basic/Translational Chairs: Claire Clarkin (Southampton, UK)				
1100-1110	OC16, Targeting Rehabilitation to Improve Outcomes following total knee arthroplasty (TRIO): a randomised controlled trial of physiotherapy interventions – David Hamilton (Edinburgh, UK)	and Andrew Phillips (London, UK) OC22, Transforming growth factor (TGF)β inhibition with chemotherapy heals murine myeloma bone disease and improves fracture resistance – Alanna Green (Sheffield, UK)				
1110–1120	OC17, Over-Impaction of Acetabular Cups Can Reduce Fixation Strength: Surgical Technique Is Critical – Ruben Doyle (London, UK)	OC23, Breast cancer metastasis to bone; the effect of LOX and P2X7R inhibition, - Karan Shah (Sheffield, UK)				
1120–1130	OC18, Bi-Unicondylar Arthroplasty preserves healthy gait characteristics and near-normal extensor mechanism efficiency compared to Total Knee Arthroplasty – Amy Garner (London, UK)	OC24, Sexual dimorphism in both bone geometry and bone strength for a mouse model of Paget's disease of bone (PDB) – Alisha Sharma (Southampton, UK)				
1130–1140	OC19, Preoperative Gait Biomechanics and its Relationship to Functional Outcome Following Total Hip Arthroplast –Cathy Holt	OC25, Is the mechanical function of the meniscus altered in osteoarthritic knees? Fahd Mahmood (Glasgow, UK)				
1140-1150	(Cardiff, UK) OC20, Platelet-rich plasma (PRP) for patellar tendinopathy: a randomized controlled trial of leukocyte-rich PRP or leukocyte-poor PRP	OC26, Repurposing glutamate receptor antagonists to prevent the onset of post-traumatic osteoarthritis – Cleo Bonnet (Cardiff, UK)				
1150-1200	vs. saline – Alex Scott (Vancouver, Canada) OC21, Charting longitudinal patient function following TKA and evaluating the influence of implant design: 8-year follow-up of a prospective RCT – David Hamilton (Edinburgh, UK)	LB3, Osteoblast interaction with an endothelial cell-specific extracellular matrix protein controls trabecular bone formation rate and patterning – Georgiana Neag (Birmingham, UK)				
1200-1230	John Pryde Lecture Theatre, Basement BORS Presidential Lecture Andrew Amis (London, UK) Chair: Richie Gill (Bath, UK)	Physiology B Lecture Theatre, Basement BRS Dent Lecture Tim Arnett (London, UK) Chair: Jim Gallagher (Liverpool, UK)				
1230-1330	Entrance Foyer area and CO.13, Ground Floor and Seminar room E1.22, 1st Floor					

Friday 6 Septen	Friday 6 September 2019 Continued/					
1330-1430 1330 - 1400 1400 - 1430	John Pryde Lecture Theatre, Basement Symposium 5: Imaging supported by ImagingBioPro Network and Scanco Chairs: Robert Wallace (Edinburgh, UK) and Wayne Ayre (Cardiff, UK) IS17, Synchrotron imaging for bone research - Ralph Muller (Zurich, Switzerland) IS18, Making Rainbows: Clinical Applications for Synchrotron Imaging - Richie Abel (London, UK)	Physiology B Lecture Theatre, Basement Symposium 6: Clinical cases Chairs: Amy Garner (London, UK) and Mike Stone (Cardiff, UK) 1330-1345 OC33, 6 cases of hypophosphatasia presenting with musculoskeletal symptoms diagnosed in General Rheumatology clinic - Katie Moss (London, UK) 1345-1400 OC34, A review of the management of patients found to have syringomyelia: a single centre experience – Oliver Cottle (Leicester, UK) 1400-1415 OC35, Coming of Age - Mike Stone (Cardiff, UK) 1415-1430 OC36, Healing of OCD after osteotomy and the effect of tibial slope on knee function - Chris Wilson (Cardiff,				
1430 - 1440	UK) Break					
1440 – 1510	Shared Lecture Theatre, 1 st Floor Plenary Lecture Chairs: Bronwen Evans (Cardiff, UK) and Richie Gill (Bath, UK) IS19, Mechanistics insights from Combination therapies- opportunities for osteoporosis					
1510 – 1610	and fracture healing - Bente Langdahl (Aarhus, Denmark) Shared Lecture Theatre, 1 st Floor Oral communications Chairs: Bronwen Evans (Cardiff, UK) and Richie Gill (Bath, UK) OC28, Molecular imaging modalities reveal pathological matrix disorganisation in whole bone sections and isolated osteoblasts – Aikta Sharma (Southampton, UK)					
1510 – 1520						
1520 – 1530	OC29, Can we predict medial knee load during gait for varus osteoarthritc knees using radiographic alignment measures? - Gemma Whatling (Cardiff, UK)					
1530 – 1540	OC30, Comprehensive evaluation of the morphology and mechanics of the human femoral head – Mark Wilkinson (Sheffield, UK) OC31, Visualisation and quantification of in situ porcine acetabular soft tissue behaviour: A study of labrum circumferential behaviour – Jiacheng Yao (Leeds, UK)					
1540 – 1550						
1550 - 1600	OC32, AMPA/kainate glutamate receptors reg markers in 3D loading models of cartilage and	•				
1600 - 1610	LB4, Repairing myeloma-induced bone disease using combination bone anabolic and antiresorptive therapy - Rebecca Andrews (Sheffield, UK)					

1610 - 1625	Shared Lecture Theatre, 1 st Floor
	Awards and closing remarks

The Scientific Programme has been developed independently by the Organising Committee under no influence from any supporting organisation or their employees.

All parties will make reasonable efforts to present educational subject matters in a scientific, balanced and unbiased way. However, participants must always use their own judgement and professional opinion when considering future application of this information, particularly as it may relate to patient diagnostic or treatment decisions.

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