

BRS

ANNUAL MEETING

BONE RESEARCH SOCIETY

BRS ANNUAL MEETING 2023

THURSDAY 13 APRIL

PRE-MEETING WORKSHOPS

FRIDAY 14 & SATURDAY 15 APRIL

BRS ANNUAL MEETING

ANNUAL MEETING 2023

13-15 APRIL 2023 • LIVERPOOL, UK



A joint meeting with the
European Calcified Tissue Society
(ECTS) at the ACC, Liverpool

Programme (Pre-Meeting Workshop Day)

Thursday 13 April 2023

12:30 – 13:30 Workshop Registration and refreshments

Muscle and Bone Workshop

(13:30 - 15:30)

Back to the bones: Evolutionary perspectives on locomotion

Evolutionary biomechanics: hard tissues and soft	Karl Bates	<i>(Liverpool, UK)</i>
Human gait: the upright ape	Kris D'Aout	<i>(Liverpool, UK)</i>
Establishing the mechanisms of, and countermeasures against, muscle decline in space	Colleen Deane	<i>(Southampton, UK)</i>

Plus the following oral communications

Low muscle density in children with osteogenesis imperfecta using low-dose chest CT: a case-control	Ling Wang	<i>(Beijing, China)</i>
Change in musculoskeletal hypermobility in adolescents between the ages of 14 and 17 in the Avon Longitudinal Study of Parents and Children	Clare Shere	<i>(Eristal, UK)</i>
Process evaluation of elastic resistance band training to benefit vertebral fracture risk in	Katherine Brooke-Wavell	<i>(Loughborough, UK)</i>

Programme (Pre-Meeting Workshop Day continued)

Cancer and Bone Workshop

(13:30 - 15:30)

Models of cancer-induced bone disease - everything you wanted to ask but were too afraid to ask

Models of primary bone cancer	Alison Gartland	(Sheffield, UK)
Models of myeloma-induced bone disease	Michelle Lawson	(Sheffield, UK)
Models of metastatic breast cancer bone disease	Penny Ottewell	(Sheffield, UK)
Models of metastatic prostate cancer bone disease	Ning Wang	(Sheffield, UK)
Models of bone cancer pain	Anne-Marie Heegaard	(Copenhagen, Denmark)

Plus the following oral communications

Characterisation of osteosarcoma cell matrix signatures reveals nanoscale molecular composition is linked to pro-angiogenic potential.	Aikta Sharma	(London, UK)
Oestrogen has a protective effect on chondrosarcoma growth in vitro and in vivo	Karan Shah	(Sheffield, UK)
Evidence for altered osteocyte morphology proximal to myeloma bone disease using synchrotron radiation micro-CT imaging	Rebecca Andrews	(Sheffield, UK)
Monitoring breast cancer-induced bone disease in nude mice using in vivo μ CT	Yue Chun Jacky Wong	(Sheffield, UK)
Targeting dormant myeloma cells using standard of care therapies	Hawazen Algifry	(Sheffield, UK)

15:30 – 16:00 Refreshment break

Rare Bone Disease Workshop

(16:00 - 19:00)

Chaired by Kassim Javaid (Oxford, UK) and George Bou-Gharios (Liverpool, UK)

Introduction to the BRS Rare Bone Disease Meeting

AKU - from bench to bedside (& bedside to bench)	Lakshminarayan Ranganath	(Liverpool, UK)
Assessing rare bone diseases using Raman Spectroscopy - novel insights	Jemma Kerns	(Lancaster, UK)
Recent research and clinical experience in management of adults with X-linked hypophosphatemia	Robin Lachmann	(London, UK)
Fibrodysplasia Ossificans Progressiva	Richard Keen	(London, UK)
Hypophosphatasia	Katie Moss	(London, UK)
Perthes Disease: Solving a 100 year old medical enigma	Daniel Perry	(Liverpool, UK)
Research in Rare bone diseases in the UK - the glass is half full	Kassim Javaid	(Oxford, UK)

Plus the following oral communications

FGFR2 mutation disturbs bone repair and formation in a mouse model of Crouzon syndrome	Laurence Legeai Mallett	(Paris, France)
Conditional knockout of renal homogentisate dioxygenase to assess the role of the kidney in homogentisic acid metabolism for future genetic therapies of alkaptonuria	Dominic Rutland	(Liverpool, UK)

Programme (Pre-Meeting Workshop Day continued)

19.00 – 19.30 Networking & Light Buffet

New Investigators/Early Career Workshop

(19.30 – 21.30)

Welcome Drinks

Careers, prizes and how to get involved – short talks and a Q&A session with mid-career researchers

Meet the PIs – a networking opportunity to meet different senior researchers and other New Investigators

Networking

BRS 2023 Programme

Friday 14 April 2023



08:30	Registration opens	
08:45 – 09:00	Welcome and opening remarks	Kate Ward (<i>Southampton, UK</i>) & Jim Gallagher (<i>Liverpool, UK</i>)
09:00 – 10:30	Skeletal Growth	
S1.1	Longitudinal growth, pubertal timing and bone health	Tim Cole (<i>London, UK</i>)
S1.2	Growth plate biology	Katherine Staines (<i>Brighton, UK</i>)
OC1.1	Relative growth rates for height among Zimbabwean children and adolescents living with HIV and established on antiretroviral therapy	Tafadzwa Madanhire (<i>Harare, Zimbabwe</i>)
OC1.2	Prenatal exposure to alcohol (PAE) negatively affects the skeleton in male mice	Lucie Bourne (<i>Brighton, UK</i>)
OC1.3	Changes in pQCT measured bone density, size and strength in Zimbabwean children with and without HIV over one year: a cohort study	Cynthia Kahari (<i>Uplands, Waterfalls, Zimbabwe</i>)
10:30 – 11:00	Coffee break and poster viewing	
11:00 – 11:30	Poster pitching	
P181	P53 regulates mitochondrial dynamics in vascular smooth muscle cell calcification.	Vicky MacRae (<i>Edinburgh, UK</i>)
P185	A new toolkit for studying matrix vesicles using biorthogonal click chemistry and correlative light-electron microscopy	Scott Dillon (<i>Cambridge, UK</i>)
P204	PHOSPHO1-MNeonGreen expressing osteoblasts allow high resolution imaging of matrix vesicles during the early stages of in vitro mineralisation	Charlotte Clews (<i>Edinburgh, UK</i>)
P212	The role of iron and the iron sensor transferrin receptor 2 (Tfr2) in heterotopic ossification	Sven Spangenberg (<i>Dresden, Germany</i>)
P051	Extent of Abdominal Aortic Calcification is Associated with Increased Risk of Rapid Weight Loss over 5 years: the Perth Longitudinal Study of Ageing Women	Cassandra Smith (<i>Perth, Australia</i>)

P285	DXA-derived knee shape is associated with knee osteoarthritis, knee pain and knee replacement: findings from a study of 37,924 people in UK Biobank.	Rhona Beynon (<i>Bristol, UK</i>)
P084	Altered biomechanics in prostate cancer patients following ADT	Fiona Gibson (<i>Sheffield, UK</i>)
P006	Longitudinal size-adjusted bone density outcomes in peripubertal children living with HIV	Lisha Jeena (<i>Oxford, UK</i>)
P007	Establishment and characterisation of doxorubicin resistant osteosarcoma cell line variants with increasing resistance	Victoria Tippett (<i>Sheffield, UK</i>)
P076	Determining the Origin and Function of Matrix Bound and Secreted Vesicles in Mineralisation	Evie Anghileri (<i>Loughborough, UK</i>)
P008	The Additive effect of Vitamin K Supplementation and Bisphosphonate on Fracture Risk in Post-menopausal Osteoporosis : a randomised placebo controlled trial	Amelia Moore (<i>London, UK</i>)
P009	Mapping 3D variation in epiphyseal architecture reveals distinct spatially-conserved patterns of bone organisation in normal canine femoral heads: a foundation for early OA detection	Gareth Jones (<i>London, UK</i>)
P199	Comparisons of thigh muscle fat content between quantitative CT (QCT) and chemical shift encoded MRI (CSE-MRI)	Wenshuang Zhang (<i>Beijing, China</i>)
P10	Myeloma cell dormancy on 3D in vitro PolyHIPE scaffold models	Alexandria Sprules (<i>Sheffield, UK</i>)
11:30 – 12:00	DENT Lecture Rickets, bone cells and rare bone disease	James Gallagher (<i>Liverpool, UK</i>)
12:00 – 12:30	Invited Lecture The MSK Grand National: What we have learnt about the musculoskeletal system from studying racehorses”	Alan Boyde (<i>London, UK</i>)
12:30 – 13:45	Lunch break & Poster Viewing	

13:45 – 15:15	Cancer and bone	
S2.1	Recent advances and gaps in primary bone cancer: challenges and opportunities	Nathalie Gaspar (<i>Paris, France</i>)
S2.2	Bone cancer-associated pain (across the different fields)	Anne-Marie Heegaard (<i>Copenhagen, Denmark</i>)
OC2.1	Assessing the Effects of Bone Anabolic Agents in Immunocompromised Mice using repeated weekly in vivo μ CT	Yue Chun Jacky Wong (<i>Sheffield, UK</i>)
OC2.2	Is losartan a bone anabolic for myeloma-induced bone disease?- A pilot study.	Georgia Stewart (<i>Sheffield, UK</i>)
OC2.3	Mechanical loading of bone suppressed lytic lesion formation and bone loss in a postmenopausal mouse model bearing breast cancer bone metastasis	Norain Ab Latif (<i>Sheffield, UK</i>)
15:15 – 15:45	Coffee break and poster viewing	
15:45 – 17:05	Immune-ageing and the implications for musculoskeletal frailty	
S3.1	Inflammaging and nutrition	Philip Calder (<i>Southampton, UK</i>)
S3.2	Damage and inflammation: Unravelling their relationship at the molecular level.	Amy Naylor (<i>Birmingham, UK</i>)
OC3.2	Impact of Menopause and HIV status on the Peripheral Skeleton of Zimbabwean Women	Mícheál Ó Breasail (<i>Bristol, UK</i>)
OC3.3	Exposure of osteocytes to diabetogenic glucose reduces differentiation and promotes senescence – a potential explanation for bone fragility in diabetes	Thibault Teissier (<i>Oxford, UK</i>)
17:05 – 18:25	Genetic influences on bone	
S4.1	Rapid-throughput skeletal phenotyping of 1000 knockout mice identifies new target genes in bone and cartilage	Duncan Bassett (<i>London, UK</i>)
S4.2	Genetic regulation of human bone mass	Emma Duncan (<i>London, UK</i>)
OC4.1	The prevalence and phenotypic range associated with biallelic PKDCC variants	Alistair Pagnamenta (<i>Oxford, UK</i>)

OC4.2	Injurious hydrostatic pressure induces a reinitiation of developmental processes in murine ex vivo cartilage: an RNAseq study	Lucie Bourne (<i>Brighton, UK</i>)
18:30 – 19:00	Sponsored Satellite Symposium	
19:30	Social evening – BRS dinner	

Saturday 15 April 2023

08:00	Registration opens	
08:30 – 09:50	Therapeutics in bone	
S5.1	Romozzumab or Teriparatide for Severe Osteoporosis?	Stuart Ralston (<i>Edinburgh, UK</i>)
S5.2	What is the future for bisphosphonates?	Graham Russell (<i>Oxford, UK</i>)
OC5.1	Treatment of osteoarthritis by inhibition of aggrecanases using targeted delivery of engineered TIMP-3	Fabio Simoes (<i>Brighton, UK</i>)
OC5.2	Low operative rates for hip fracture challenge survival in Zimbabwe; findings from the Fractures-E3 Study	Hannah Wilson (<i>Bristol, UK</i>)
09:50 – 10:20	Sponsored Satellite Symposium	
10:20 – 10:50	Coffee break and poster viewing	
10:50 – 12:20	Experimental Models in MSK Research	
S6.1	A cellular atlas of human MSK tissues: opportunities and insights for the future	Jennifer Westendorf (<i>USA</i>)
S6.2	Zebrafish models for studies of musculoskeletal tissues	Chrissy Hammond (<i>Bristol, UK</i>)
OC6.1	Optimisation and characterisation of an adaptable and humanised in vitro 3D self-structuring bone model, capable of long-term osteocyte culture.	Melissa Finlay (<i>Birmingham, UK</i>)
OC6.2	Condylar asymmetry in the knees of osteoarthritic mice	Lucinda Evans (<i>London, UK</i>)

OC6.3	Permeabilisation of Cells Using Ultrasound Stimulated Microbubbles for Bone Fracture Repair	Sam Sloan (<i>Southampton, UK</i>)
12:20 – 12:45	Closing remarks and Awards	Kate Ward (<i>Southampton, UK</i>), Alison Gartland (<i>Sheffield, UK</i>) & Jim Gallagher (<i>Liverpool, UK</i>)