

PROGRAMME

WEDNESDAY 27 JUNE

Talks in Stripe Auditorium

Catering breaks and coffee and dessert at lunchtime, exhibition and poster viewing in Stripe Lecture Room, Stripe Studio 1 and 2

12:00	<i>Foyer, The Stripe Building</i> Registration desk opens, coffee available
13:00 - 14:45	BRS-IOF Symposium: Global burden of osteoporosis and sarcopenia Chairs: Cyrus Cooper (Southampton, UK) and Elizabeth Curtis (Southampton, UK)
13:05 - 13:30	Osteoporotic fracture risk: A lifecourse perspective Nick Harvey (Southampton, UK)
13:30 - 13:55	Secondary fracture prevention Kassim Javaid (Oxford, UK)
13:55 - 14:20	Advances in clinical risk assessment Eugene McCloskey (Sheffield, UK)
14:20 - 14:45	Anabolic therapies Serge Ferrari (Geneva, Switzerland)
14:45 - 14:55	Industry presentation supported by Internis Chairs: Cyrus Cooper (Southampton, UK) and Elizabeth Curtis (Southampton, UK) Alendronate 70 mg effervescent buffered solution: Are You Experienced? Three years of improved adherence in Italy Andrea Giusti (Milan, Italy)
15:00 - 15:30	Refreshment break and exhibition
15:30 - 16:50	Muscle and bone workshop Organisers: Alex Ireland (Manchester, UK) and Kate Ward (Southampton, UK)
15:30 - 15:55	Physiological and structural changes in skeletal muscle and nerve-muscle interactions: the effects of nutrition and ageing Aphrodite Vasilaki (Liverpool, UK)
15:55 - 16:20	Exercise, nutrition and sarcopenia Elaine Dennison (Southampton, UK)
16:20 - 16:45	Discussions re future muscle-bone initiatives (All)
17:00 - 18:30	<i>Terrace Bar and Lounge</i> New Investigator Session - Meet the Professor - Mentorship Organisers: Elizabeth Curtis (Southampton, UK) and Katherine Staines (Edinburgh, UK)
19:00 - 22:00	<i>Winchester Cathedral - Wessex Suite</i> Rare Bone Diseases Workshop and Supper Organisers: Nick Bishop (Sheffield, UK) and Kassim Javaid (Oxford, UK) <i>In association with International Conference on Children's Bone Health (ICCBH)</i> We are grateful to Kyowa Kirin and Mereo BioPharma for their support
19:00 - 19:30	Registration and networking

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19:30-19:55	What has genetics taught us about bringing basic scientists and clinicians together? Matt Warman (Boston, USA)
19:55-20:15	100,000 Genomes and rare bone disorders: impacts for patients, clinicians and scientists Richard Scott (Cambridge/London, UK)
20:15-20:25	P1 X-linked hypophosphataemia: burden of disease using United Kingdom primary care data Kassim Javaid (Oxford, UK)
20:25-20:35	P2 Localisation and partial deletion of the HGD gene in a new targeted model of alkaptonuria Juliette Hughes (Liverpool, UK)
20:35-20:45	P3 A review of clinical, radiological and treatment features from 18 patients with SAPHO (synovitis, acne, pustulosis, hyperostosis and osteitis) syndrome and CRMO (chronic recurrent multifocal osteomyelitis) at Addenbrooke's Hospital Jagtar Singh Nijjar (Cambridge, UK)
20:45-21:00	Short break
21:00-21:20	Burosumab in paediatric bone diseases: what have we learnt? Anya Rothenbuhler (Paris, France)
21:20-21:40	Asfotase alfa therapy in perinatal and infantile hypophosphatasia Wolfgang Högl (Birmingham, UK)
21:40-22:00	Repurposing in rare bone disease therapies Mike Briggs (Newcastle upon Tyne, UK)
22:00	Close

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09:30	Registration and coffee
09:40-10:00	Welcome and opening remarks Miep Helfrich (Aberdeen, UK) and Kate Ward (Southampton, UK) Cyrus Cooper (Southampton, UK) and Richard Oreffo (Southampton, UK) Mark Spearing (University of Southampton)
10:00-11:00	Symposium 1: Tissue engineering and regenerative medicine bench to clinic Chairs: Miep Helfrich (Aberdeen, UK) and Richard Oreffo (Southampton, UK)
10:00-10:20	IS1 Polymers for controlling and manipulating cells Mark Bradley (Edinburgh, UK)
10:20-10:40	IS2 Re-engineering developmental processes for tissue regeneration Ivan Martin (Basle, Switzerland)

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- 10:40-11:00 **IS3** Mesenchymal stromal cell lineages in the joint in health, injury and arthritis
Anke Roelofs (Aberdeen, UK)
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- 11:00-11:40** **Oral communications**
Chairs: **Duncan Bassett** (London, UK) and **Fjola Johannesdottir** (Boston, USA)
- 11:00-11:10 **OC1** Social deprivation predicts adverse health outcomes after hospital admission with hip fracture in England
Arti Bhimjiyani (Bristol, UK)
- 11:10-11:20 **OC2** *Tram2* is a novel genetic determinant of bone mass and strength
Victoria D. Leitch (London, UK)
- 11:20-11:30 **OC3** Novel combination therapy with zoledronic acid and anti-TGF β repairs established osteolytic lesions in preclinical models of multiple myeloma
Andrew Chantry (Sheffield, UK)
- 11:30-11:40 **OC4** Systematic fracture risk screening using FRAX results in greater use of, and adherence to, anti-osteoporosis medications: The UK SCOOP Trial
Camille Parsons (Southampton, UK)
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- 11:40-12:00** **Poster Pitching**
Chairs: **Duncan Bassett** (London, UK) and **Fjola Johannesdottir** (Boston, USA)
- P5** Cluster analysis of high resolution peripheral quantitative computed tomography parameters including finite element analysis identifies bone phenotypes associated with higher rates of prevalent fracture
Mark Edwards (Southampton, UK)
- P7** Spontaneous atypical tibial and femoral fractures associated with alendronate then denosumab therapy in an adult patient with juvenile idiopathic arthritis: a case report
Juan Tan (Edinburgh, UK)
- P9** Impact of mild and moderate/severe vertebral fractures on physical activity: A five-year prospective study based on a cohort of older women in the UK
Usama Al-Sari (Bristol, UK)
- P11** A tale of two phosphatases: dissecting the roles of PHOSPHO1 and TNAP during skeletal biomineralisation
Scott Dillon (Edinburgh, UK)
- P13** *Slc38a10* is a novel genetic determinant of osteoblast proliferation and bone mineral density
Andrea Pollard (London, UK)
- P15** Bone induction in a murine subcutaneous model using nanoclay gel and bone morphogenic protein: an optimisation study
Josephine McEwan (Southampton, UK)
- P17** TGF β inhibition in combination with chemotherapy repairs existing lytic bone lesions in a novel plateau phase model of multiple myeloma
Michelle Lawson (Sheffield, UK)
- P19** Gpc6: a novel determinant of bone mineral density in osteoporosis
Naila Mannan (London, UK)
- P21** Fam73b is essential for skeletal growth and the maintenance of bone mass and strength
David Komla-Ebri (London, UK)

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11:40-12:00 <i>continued</i>	P23 Osteocalcin regulates arterial calcification via altered Wnd signalling and glucose metabolism Nabil Rashdan (Edinburgh, UK) P25 All that fractures is not bone: microscopic anatomy of vertebral bodies Alan Boyde (London, UK)
12:00-13:00	Coffee and poster viewing (odd numbered posters)
13:00-14:00	Lunch - Food Hall Annual General Meeting - Stripe Auditorium
14:00-14:40	UCB sponsored Lecture Chair: Duncan Bassett (London, UK) Targeting and tracking Wnt-related signalling mechanisms in mesenchymal stem cells Paul Genever (York, UK)
14:40-15:10	Plenary Lecture Chairs: Cyrus Cooper (Southampton, UK) and Bronwen Evans (Cardiff, UK) IS4 Targeting cellular senescence: A new therapeutic approach for age-related osteoporosis Sundeep Khosla (Rochester, USA)
15:10-15:30	Coffee and poster viewing
15:30-16:30	Symposium 2: The Judith Adams Imaging Symposium: From Mice to Men Chairs: Ken Poole (Cambridge, UK) and Katherine Staines (Edinburgh, UK)
15:30-15:50	IS5 Label-free techniques and multimodal imaging in skeletal repair and regeneration Sumeet Mahajan (Southampton, UK)
15:50-16:10	IS6 Models for mechanobiology Markus Heller (Southampton, UK)
16:10-16:30	IS7 High-resolution imaging of soft and hard tissues at once and in 3D, please! Phillipp Schneider (Southampton, UK)
16:30-16:40	Industry presentations Chairs: Ken Poole (Cambridge, UK) and Katherine Staines (Edinburgh, UK) Imaging and analysis for bone research - from nanometre to micrometre scale Katherine Lau (Carl Zeiss Ltd, Cambridge, UK) An update on high-resolution peripheral quantitative computed tomography Vincent Stadelmann (Scanco Medical, Bruettisellen, Switzerland)
16:45-17:15	Plenary Lecture Chairs: Alex Ireland (Manchester, UK) and Richard Oreffo (Southampton, UK) IS8 The functions of the osteocyte change with age Lynda Bonewald (Indianapolis, USA)
17:20-17:50	Charles Dent Lecture Chair: Miep Helfrich (Aberdeen, UK) Prevention of osteoporotic fracture throughout the lifecourse Cyrus Cooper (Southampton, UK)

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17:55-18:40

Debate

Chair: Kate Ward (Southampton, UK)

Fracture is the only endpoint for osteoporosis trials

For the motion: **Celia Gregson** (Bristol, UK)

Against the motion: **Ken Poole** (Cambridge, UK)

19:15-23:00

Conference Dinner (*River Cottage, Winchester*)

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Catering breaks and coffee and dessert at lunchtime, exhibition and poster viewing in Stripe Lecture Room, Stripe Studio 1 and 2, Lunch in Food Hall

08:30-09:30

Symposium 3: Early life origins of disease

Chairs: Elizabeth Curtis (Southampton, UK) and Kassim Javaid (Oxford, UK)

08:30-09:00

IS9 Epigenetics of early life origins of disease

Karen Lillycrop (Southampton, UK)

09:00-09:30

IS10 Global perspective on early life determinants of non-communicable disease

Mark Hanson (Southampton, UK)

09:30-10:00

Poster Pitching

Chairs: Elizabeth Curtis (Southampton, UK) and Kassim Javaid (Oxford, UK)

PP4 Self-perception of fracture risk is associated with radial bone microarchitecture in the GLOW Study

Leo Westbury (Southampton, UK)

PP6 Severe lumbar spinal stenosis on MRI scans is related with heavy manual work: The Wakayama Spine Study

Yuyu Ishimoto (Southampton, UK)

PP8 Osteoclasts are multinucleated cells that degrade cartilage, as well as bone

Quitterie Larrouture (Oxford, UK)

PP10 Limb bones scale similarly despite forelimb-hindlimb load asymmetry in bipedal hopping

Michael Doube (London, UK)

PP12 Human decellularised blood vessel matrices promote bone repair in an *ex vivo* bone defect model

Janos Kanczler (Southampton, UK)

PP14 *In vivo* skeletal regeneration using a nanocomposite silicate-based bioink

Gianluca Cidonio (Southampton, UK)

PP16 Osteoporosis as a risk factor for the occurrence of frailty: a four-year follow-up of the ROAD study

Noriko Yoshimura (Tokyo, Japan)

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09:30-10:00
continued

- PP18** Photoperiod-induced central actions of thyroid hormone are essential for medullary bone formation in Japanese quail
Natalie Butterfield (London, UK)
- PP20** Age related changes in native human bone marrow mesenchymal stem cells
Payal Ganguly (Leeds, UK)
- PP22** Independent skeletal phenotyping of Creb3l1 knockout mice confirms validity of signature in human GWAS
Elena J Ghirardello (London, UK)
- PP24** The regulation of bone mineralisation *in vitro* and *in vivo* models of chronic kidney disease
Shun-Neng Hsu (Edinburgh, UK)
- PP26** Inhibition of the Protein Kinase R signaling pathway *in vivo* reduces bone remodeling in post-traumatic osteoarthritis
Sophie Gilbert (Cardiff, UK)
- PP28** VEGF exerts sexually dimorphic effects on bone mass and architecture
Behzâd Javaheri (London, UK)
- PP30** Falls risk is increased and bone mineral density reduced in individuals with rheumatoid arthritis: findings from UK biobank
Michael Clynes (Southampton, UK)
- PP32** IRF5 is required for macrophage-driven bone formation
Nicole Horwood (London, UK)

10:00 - 11:00

Coffee and poster viewing (even numbered posters)

11:00 - 12:00

Clinical (*Tom Atkinson Building*)
Chairs: **Celia Gregson** (Bristol, UK)
and **Mark Edwards** (Portsmouth, UK)

Basic/Translational (*Stripe Auditorium*)
Chairs: **Shelly Lawson** (Sheffield, UK)
and **Christa Maes** (Leuven, Belgium)

11:00 - 11:10

OC5 Age at onset of walking in infancy is associated with hip shape in early old age
Alex Ireland (Manchester, UK)

OC9 Repurposing glutamate receptor antagonists for the prevention of post-traumatic osteoarthritis
Sophie Gilbert (Cardiff, UK)

11:10 - 11:20

OC6 A 9-month jumping intervention to improve bone acquisition in adolescent male athletes: The PRO-BONE randomized controlled trial
Dimitris Vlachopoulos (Exeter, UK)

OC10 MMnet, a Macrophage Multinucleation Network enriched in genes controlling osteoclast function
Marie Pereira (London, UK)

11:20 - 11:30

OC7 Plasma β -C-terminal telopeptide of type I collagen (CTX) in pregnancy is influenced by cholecalciferol supplementation and is associated with maternal bone health: findings from the MAVIDOS trial
Elizabeth Curtis (Southampton, UK)

OC11 Bromodomain inhibitors are potent epigenetic regulators of catabolic gene expression in human osteoarthritic chondrocytes
Maria de Andrés (Southampton, UK)

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11:30 - 11:40	OC8 Relationships between the hypothalamic-pituitary-adrenal axis and bone microarchitecture: findings from the Hertfordshire Cohort Study Nicholas Fuggle (Southampton, UK)	OC12 Application of 3D printed patient specific skeletal implants augmented with autologous skeletal stem cells Josephine McEwan (Southampton, UK)
11:40 - 11:50	LB1 Pregnancy induced changes in bone microarchitecture and density at the tibia as determined by single-slice and high-resolution peripheral quantitative computed tomography Mícheál O Breasail (Cambridge, UK)	OC13 Bovine Lactoferrin Promotes Bone Regeneration Jillian Cornish (Auckland, New Zealand)
11:50 - 12:00		OC14 Increased sclerostin expression following OB-derived VEGF deletion Alice Goring (Southampton, UK)
12:00 - 12:30	Satellite symposium Lilly sponsored Lecture Chair: Cyrus Cooper (Southampton, UK) Teriparatide: a key building block in osteoporosis research and treatment, the past and present Fernando Marin (Lilly Research Centre, Windlesham, UK)	
12:40 - 13:30	Lunch and poster viewing	
13:30 - 14:30	Symposium 4: Ageing Chairs: Nick Harvey (Southampton, UK) and Eugene McCloskey (Sheffield, UK)	
13:30 - 14:00	IS11 Inflammation and musculoskeletal ageing Janet Lord (Birmingham, UK)	
14:00 - 14:30	IS12 Neglected patients at high risk of hip fractures Steve Cummings (San Francisco, USA)	
14:30 - 15:00	Plenary Lecture Chairs: Claire Clarkin (Southampton, UK) and Stephanie Gohin (London, UK)	
	IS13 Osteo-angiogenic coupling in skeletal development, bone homeostasis and fracture repair Christa Maes (Leuven, Brussels)	
15:00 - 16:00	Oral communications Chairs: Bo Abrahamsen (Odense, Denmark) and Jim Gallagher (Liverpool, UK)	
15:00 - 15:10	LB2 Zoledronate every 18 months for 6 years in osteopenic postmenopausal women: effects on fractures and non-skeletal endpoints Ian Reid (Auckland, New Zealand)	

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15:10-15:20	OC15 Serum citrate: a novel biomarker of bone resorption? April Hartley (Bristol, UK)
15:20-15:30	OC16 Women at high risk of hip fracture based on FRAX respond to appropriate osteoporosis management: analysis from the SCOOP study of population screening Eugene McCloskey (Sheffield, UK)
15:30-15:40	OC17 Osteoblast-specific <i>Enpp1</i> deficiency engenders increased bone mass and insulin resistance Fiona Roberts (Edinburgh, UK)
15:40-15:50	OC18 A new dual injury osteoarthritis model that combines cartilage damage and destabilisation of the medial meniscus leads to accelerated osteophytogenesis Carl Goodyear (Glasgow, UK)
15:50-16:00	OC19 Longitudinal survey of high density mineralised protrusions: a potential novel imaging biomarker of osteoarthritis Neil Thomas (Liverpool, UK)

16:00-16:15	Awards and closing remarks Jim Gallagher (Liverpool, UK) and Miep Helfrich (Aberdeen, UK)
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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 matter in a scientific, balanced and unbiased way. However, participants must always use their own judgment 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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