Bone Research Society Membership

Your advantages as a member

The Bone Research Society (BRS), formerly the Bone and Tooth Society, was founded in 1950. The BRS is one of the largest national scientific societies in Europe dedicated to clinical and basic research into mineralised tissues, and is the oldest such society in the world.

Meetings are held annually, attracting a wide audience from throughout the UK and beyond. The presentations are traditionally balanced between clinical and laboratory studies. The participation of young scientists and clinicians is actively encouraged.

- **Reduced fees** for BRS annual meetings
- **Barbara Mawer Travelling Fellowships**: To support travel for NI’s to another laboratory. The awards are intended for the learning of new methodology to capacity build and be of benefit for the NI’s home institution
- **Neil Mackenzie Public Engagement Awards**: will provide a bursary (£500) to support a new investigator participating in, or developing activities related to, public engagement to enhance awareness of research by members of the Bone Research Society, relating to basic, clinical or translational research in mineralised tissues
- **BRS Snowmass Travel Award**: To provide top-up funding of £750 to an NI who has been selected to attend the ASBMR AIMM meeting
- **New Investigator Awards**: These are awarded to the top ranking abstracts submitted to the annual meeting by New Investigators
- **Travel Bursaries**: Available to any member to support travel to one conference per year providing an abstract has been presented. BRS, national and international conferences apply.

This year we introduced a ‘Find a Mentor’ scheme for NI members.

- Provides an opportunity to members to become involved in the running of the society through election to the executive committee
- Access to teaching material from BRS meetings.

**How much does it cost?**

- Full membership: £50 per annum
- Student membership (earning under £20,000): £25 per annum

Membership year runs from 1 April to 31 March, payable via debit/credit card or PayPal online.

Join today and your membership will run until the end of March 2018.

If you have any queries about membership please email membership@boneresearchsociety.org
The Society (formerly known as the Bone and Tooth Society) is the oldest scientific society in Europe dedicated to further research into clinical and basic science problems related to mineralised tissues. The BRS Annual Meeting attracts a wide audience from throughout the UK and also from continental Europe and further afield. The presentations are traditionally a balance between clinical and laboratory-based studies. The participation of young scientists and clinicians is actively encouraged.

COMMITTEE 2017 / 2018

Miep Helfrich (Aberdeen) (President)
Kate Ward (Southampton) (Secretary)
Bronwen Evans (Cardiff) (Treasurer)
Jim Gallagher (Liverpool) (President-Elect)
Duncan Bassett (London)
Mark Edwards (Southampton)
Celia Gregson (Bristol)
Nick Harvey (Southampton)
Alex Ireland (Manchester)
Kassim Javaid (Oxford)
Michelle Lawson (Sheffield)
Vicky McRae (Edinburgh)

New Investigator Rep:
Katherine Staines (Edinburgh)

MEMBERSHIP ENQUIRIES

Email: membership@boneresearchsociety.org

FUTURE MEETINGS

BRS Clinical Training Course:
Osteoporosis and Other Metabolic Bone Diseases
26-28 March 2018
Merton College, Oxford, UK

BRS 2018
27-29 June 2018
Winchester, UK
Deadline for abstracts 9 February 2018

For further details on all BRS activities and events please see
www.boneresearchsociety.org
AWARDS

DENT AWARD
Lance Lanyon (Bristol, UK)

NEIL MACKENZIE AWARD
Esther Cummings

NEW INVESTIGATOR AWARDS
New Investigator Awards are awarded prior to the meeting, based on scores achieved during the blind review process of the meeting.

OC2 - Elizabeth Curtis
(Southampton): RXRA promoter DNA methylation at birth is associated with gestational vitamin D supplementation: results from the MAVIDOS trial

OC3 - Sam Olechnowicz
(Oxford): The nuclear receptor PPARα is a regulator of bone volume and strength

OC4 - Fiona Roberts
(Edinburgh): Does skeletal NPP1 regulate mineralisation and energy metabolism?

OC5 - Katherine Staines
(Edinburgh): The proton pump inhibitor omeprazole inhibits PHOSPHO1 activity and matrix mineralisation in vitro

OC7 - Emma McDermott
(Aberdeen): Osteoclast ruffled border formation: a new perspective

OC8 - Aneka Sowman
(Oxford): AdipoR1 deficiency leads to low bone mass and increased bone adiposity in vivo

OC9 - April Hartley
(Bristol): Sarcopenia is negatively related to osteogenic impacts achieved through habitual physical activity: findings from a population-based cohort of older females

OC11 - Nicholas Fuggle
(Southampton): Relationships between markers of inflammation, grip strength and bone microarchitecture: findings from the Hertfordshire Cohort Study

OC12 - Geoffrey Lee
(Oxford): HMGB1 accelerates regeneration of multiple tissues by transitioning stem cells to G(Alert).

P2 - Beatriz Larraz-Prieto
(Edinburgh): Prevalence of low alkaline phosphatase and ALPL mutations in patients with osteoporosis

P15 - Alice Goring
(Southampton): Evidence for gender-specific vascular signalling in bone

On site awards for Best Poster, Best Oral Communication and Best Poster Pitch to be announced at the end of the meeting.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:00</td>
<td>Registration Opens</td>
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<tr>
<td>13:00 - 14:30</td>
<td>Rosalind Franklin Room</td>
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<tr>
<td></td>
<td>New Investigator Session ‘How to succeed in research’</td>
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<tr>
<td>14:30 - 15:10</td>
<td>Rosalind Franklin Room</td>
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<td></td>
<td>Muscle and Bone Workshop, Debate: Mechanostat: Fact or Fiction?</td>
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<tr>
<td>15:10 - 16:00</td>
<td>Oral presentations</td>
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<tr>
<td>16:00 - 16:10</td>
<td>Coffee break</td>
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<tr>
<td>16:10 - 17:10</td>
<td>Learning Room 1, 2, 3 and 4 (sessions running concurrently)</td>
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<td>Meet the Professor sessions</td>
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<tr>
<td>17:15 - 17:45</td>
<td>The Annexe</td>
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<td>Welcome Drinks Reception</td>
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<tr>
<td>17:50 - 21:40</td>
<td>Rosalind Franklin Room</td>
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<td></td>
<td>Rare Bone Diseases Workshop and Buffet Supper</td>
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## Programme Overview - Monday 26 June

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:00 - 18:00</td>
<td></td>
<td>Registration Open</td>
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<tr>
<td>09:50 - 10:00</td>
<td>Rosalind Franklin Room</td>
<td>Welcome and opening remarks</td>
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<tr>
<td>10:00 - 11:00</td>
<td>Rosalind Franklin Room</td>
<td>Symposium 1: BIG Data – how exploitation of genetic data has led to new insights</td>
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<tr>
<td>11:00 - 11:05</td>
<td>Rosalind Franklin Room</td>
<td>Frontiers Journal Update</td>
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<td></td>
<td>11:05 - 11:40 Rosalind Franklin Room Poster pitching</td>
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<tr>
<td></td>
<td>11:40 - 13:00 Maurice Wilkins and James Watson Rooms</td>
<td>Posters P1-P20, Posters P31-P79 (odd numbers only) and late breaking posters LBP4 - LBP11</td>
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<tr>
<td>13:00</td>
<td></td>
<td>Lunch</td>
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<tr>
<td>13:25 - 13:55</td>
<td>Rosalind Franklin Room</td>
<td>AGM (BRS Members only)</td>
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<tr>
<td>13:55 - 14:45</td>
<td>Rosalind Franklin Room</td>
<td>Oral communications</td>
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<tr>
<td>14:45 - 15:10</td>
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<td>Coffee and poster viewing</td>
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<tr>
<td>15:10 - 16:10</td>
<td>Rosalind Franklin Room</td>
<td>Symposium 2: Blood and Bone – skeletal vasculature and bone remodelling</td>
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<td>Rosalind Franklin Room</td>
<td>Oral communications</td>
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<td>16:40 - 16:50</td>
<td>Break</td>
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<td>16:50 - 17:20</td>
<td>Rosalind Franklin Room</td>
<td>Oral communications</td>
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<tr>
<td>17:20 - 18:20</td>
<td>Rosalind Franklin Room</td>
<td>Debate: Osteoporosis – Nature or nurture?</td>
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<tr>
<td>19:15</td>
<td>Clifton Pavilion, Bristol Zoo Gardens</td>
<td>Conference Dinner</td>
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<tr>
<td>08:15 - 16:30</td>
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<tr>
<td>08:45 - 09:45</td>
<td>Symposium 3: Bugs and Bone</td>
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<tr>
<td>09:45 - 10:15</td>
<td>Rosalind Franklin Room</td>
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<td></td>
<td>Oral communications and late breaking abstracts</td>
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<tr>
<td>10:15 - 10:35</td>
<td>Rosalind Franklin Room</td>
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<tr>
<td></td>
<td>Poster pitching</td>
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<tr>
<td>10:35 - 11:30</td>
<td>Maurice Wilkins and James Watson Rooms</td>
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<td></td>
<td>Coffee and poster viewing</td>
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<td></td>
<td>Posters P21-P30 and Posters P32-P78 (even numbers only)</td>
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<tr>
<td>11:30 - 12:30</td>
<td>Rosalind Franklin Room</td>
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<td>Symposium 4: About time – how do cellular ageing mechanisms affect the musculoskeletal system?</td>
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<td>12:30 - 13:15</td>
<td>Lunch</td>
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<td>13:15 - 13:40</td>
<td>Rosalind Franklin Room</td>
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<td>Symposium 5: Physical activity and bone</td>
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<td>13:40 - 14:20</td>
<td>Rosalind Franklin Room</td>
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<td>Charles Dent Lecture: Lance Lanyon</td>
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<td>14:20 - 15:00</td>
<td>Rosalind Franklin Room</td>
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<td>UCB sponsored symposium lecture: Roland Baron</td>
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<td>15:00 - 15:15</td>
<td>Coffee</td>
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<tr>
<td>15:15 - 16:15</td>
<td>Rosalind Franklin Room</td>
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<td>Symposium 6: The new face of fat – adipocytes as novel mediators in bone biology</td>
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<td>15:15 - 16:30</td>
<td>Francis Crick Room</td>
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<td>Clinical update and cases</td>
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<td>16:15 - 16:30</td>
<td>Rosalind Franklin Room</td>
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<td></td>
<td>Awards</td>
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<td>18:00</td>
<td>Rosalind Franklin Room</td>
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<td></td>
<td>Public Engagement Event in association with the National Osteoporosis Society</td>
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<td>Physical activity and bone: may the force be with you</td>
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</table>
PROGRAMME - SUNDAY 25 JUNE

12:00 The Annexe @ Bristol Science Centre - Registration desk opens

13:00 - 14:30 Francis Crick Room - New Investigator Session: ‘How to succeed in research’
Chair: Mark Edwards (Southampton, UK), Katherine Staines (Edinburgh, UK)
Speaker: Cyrus Cooper (Southampton, UK)
Speaker: James Edwards (Oxford, UK)

14:30 - 15:10 Francis Crick Room - Muscle and Bone Workshop
Chair: Alex Ireland (Manchester, UK), Kate Ward (Southampton, UK)
Debate: Mechanostat: Fact or Fiction?
For the motion: Nicola Crabtree (Birmingham, UK)
Against the motion: Alex Ireland (Manchester, UK)

15:10 - 15:20 P17 - Use of hip DXA to scan identify shape changes associated with hip osteoarthritis,
Benjamin Faber (Bristol, UK)

15:20 - 15:30 P31 - High magnitude vertical impacts are positively related to hip strength in master athletes,
Ahmed Elhakeem (Bristol, UK)

15:30 - 15:40 P19 - Bone health in boys with Duchenne muscular dystrophy: The dichotomy between bone density and fracture,
Nicola Crabtree (Birmingham, UK)

15:40 - 15:50 P32 - The ontogeny of human vertebral bone microstructure: implications for mechanical performance,
Nic Roberts (Bristol, UK)

15:50 - 16:00 LBP4 - Skeletal defects emerge surprisingly early in murine models of secondary dystroglycanopathy,
Mark Hopkinson (London, UK)

16:10 - 17:10 Meet the Professor sessions (running concurrently)

Learning Room 1
Session 1: GWAS studies
Brent Richards (McGill, Canada)

Learning Room 2
Session 2: Cellular senescence
Lynne Cox (Oxford, UK)

Learning Room 3
Session 3: Assessment of muscle function and sarcopenia
Kate Ward (Southampton, UK)

17:15 - 17:45 The Annexe - Welcome Drinks Reception

17:50 - 21:40 Rosalind Franklin Room - Rare Bone Diseases Workshop & Buffet Supper
Chair: Kassim Javaid (Oxford, UK)

17:50 - 18:00 Introduction to workshop,
Kassim Javaid (Oxford, UK)

18:00 - 18:30 Fibrous dysplasia investigation and management,
Kassim Javaid (Oxford, UK)

18:30 - 18:50 Buffet supper

18:50 - 20:10 Adult Skeletal Dysplasias,
Melita Irving (London, UK)

19:20 - 19:50 Pycnodysotosis,
Zulf Mughal (Manchester, UK)

20:10 - 20:18 P2 - Prevalence of low alkaline phosphatase and ALPL mutations in patients with osteoporosis,
Beatriz Larraz-Prieto (Edinburgh, UK)

20:18 - 20:26 P33 - ETS2 Repressor Factor (ERF) – associated craniosynostosis: molecular mechanisms and therapeutic approaches,
Angeliki Vogiatzi (Heraklion, Greece)
20:26 - 20:34  P34 - Generation of the HGD mouse model of alkaptonuria,  
Juliette Hughes (Liverpool, UK)

20:34 - 20:42  P25 - Characterizing the epidemiology of hypophosphatasia in a population in the United Kingdom,  
Sara Jenkins-Jones (Cardiff, UK)

20:42 - 20:50  P35 - Evaluation of the Utah algorithm for identifying hypophosphatasia to estimate prevalence in the United Kingdom,  
Sara Jenkins-Jones (Cardiff, UK)

20:50 - 21:20  Genetics of hypocalcaemia  
Fadil Hannan (Liverpool, UK)

21:20 - 21:40  Networking

21:40  Evening concludes
Catering breaks and exhibition in the Annexe.
Posters in the Maurice Wilkins and James Watson Rooms.
Talks in Rosalind Franklin Room.

09:00 Registration desk opens

09:50 - 10:00 Welcome and opening remarks
Miep Helfrich (Aberdeen, UK) and Jon Tobias (Bristol, UK)

10:00 - 11:00 Symposium 1: BIG Data – how exploitation of genetic data has led to new insights
Chairs: Celia Gregson (Bristol, UK) and Stuart Ralston (Edinburgh, UK)
IS1 - The EN1 Story: the gains from imputation and whole genome sequencing,
Brent Richards (McGill, Canada)
IS2 - Strategies for causal inference and the use of genetic data to predict successful drug development,
George Davey Smith (Bristol, UK)

11:00 - 11:05 Frontier’s Journal Update
Davor Vidic

11:05 - 11:40 Poster pitching (90 seconds per poster)
Chairs: Alex Ireland (Manchester, UK) and Katherine Staines (Edinburgh, UK)
P1 - ARQ-197, a small-molecule inhibitor of c-Met, reduces tumour burden and prevents tumour-associated bone disease in a murine model of myeloma,
Darren Lath (Sheffield, UK)
P2 - Prevalence of low alkaline phosphatase and ALPL mutations in patients with osteoporosis,
Beatriz Larraz-Prieto (Edinburgh, UK)
P4 - Susceptibility genes for hip osteoarthritis may influence hip shape,
Denis Baird (Bristol, UK)
P6 - Relationships between DNA methylation, femoral neck bone mineral density and grip strength from an epigenome wide association study: the Hertfordshire Cohort,
Elizabeth Curtis (Southampton, UK)
P7 - Valve interstitial cell (VIC)-derived matrix vesicles (MVs) regulate the pathogenesis of Calcific Aortic Valve Disease (CAVD): a role for Annexin-VI?
Lin Cui (Edinburgh, UK)
P8 - The effect of social deprivation on hip fracture incidence in men and women over 14 years across regions in England,
Arti Bhimjiyani (Bristol, UK)
P9 - Effect of applied mechanical loading on skeletal bone blood flow in mice
Stephanie Gohin (London, UK)
P10 - Association between physical activity and scoliosis: A prospective cohort study,
Emma Clark (Bristol, UK)
P11 - Vascular calcification and bone formation: are they the same?
 Jessal Patel (London, UK)
P12 - Muscle strength and physical performance from midlife and bone health in early old-age: the MRC National Survey of Health and Development,
Kate Ward (Southampton, UK)
P13 - Deciphering the signalling mechanisms underpinning fibroblast growth factor-2 (FGF-2) mediated osteocytogenesis,
Ekele Ikpegbu (Edinburgh, UK)
P14 - 25-hydroxyvitamin D response to cholecalciferol supplementation in pregnancy is associated with common vitamin D related genetic variants: findings from the MAVIDOS trial,
Rebecca Moon (Southampton, UK)
P15 - Evidence for gender-specific vascular signalling in bone,
Alice Goring (Southampton, UK)
P16 - Multiple myeloma regulates bone marrow adipocyte number, localisation and adipokine secretion,
Emma Morris (Oxford, UK)
P17 - Use of hip DXA scans to identify shape changes associated with hip osteoarthritis, Benjamin Faber (Bristol, UK)

P18 - 18F-FDG PET/CT imaging following insulin treatment and short term cold exposure in mice, Karla Suchacki (Edinburgh, UK)

P19 - Bone health in boys with Duchenne muscular dystrophy: The dichotomy between bone density and fracture, Nicola Crabtree (Birmingham, UK)

P20 - Bisphosphonates regulate autophagy in vitro and in vivo, Jack Beard (Oxford, UK)

LBP4 - Skeletal defects emerge surprisingly early in murine models of secondary dystroglycanopathy, Mark Hopkinson (London, UK)

LBP5 - Sex-dependent associations between objectively-assessed physical activity and bone mineral density in community-dwelling older adults, Lachlan McMillan (Melbourne, Australia)

LBP6 - Repurposing glutamate receptor antagonists for the prevention of post-traumatic osteoarthritis, Cleo Bonnet (Cardiff, UK)

13:55 - 14:05 OC1 - Genome-wide association analysis identifies CXCR4 gene as predictor of therapeutic response to teriparatide in severe osteoporosis, Nerea Alonso (Edinburgh, UK)

14:05 - 14:15 OC2 - RXRA promoter DNA methylation at birth is associated with gestational vitamin D supplementation: results from the MAVIDOS trial, Elizabeth Curtis (Southampton, UK)

14:15 - 14:25 OC3 - The nuclear receptor PPARα is a regulator of bone volume and strength, Sam Olechnowicz (Oxford, UK)

14:25 - 14:35 OC4 - Does skeletal NPP1 regulate mineralisation and energy metabolism? Fiona Roberts (Edinburgh, UK)

14:35 - 14:45 OC5 - The proton pump inhibitor omeprazole inhibits PHOSPHO1 activity and matrix mineralisation in vitro, Katherine Staines (Edinburgh, UK)

14:45 - 15:10 Coffee and poster viewing

15:10 - 16:10 Symposium 2: Blood and Bone — skeletal vasculature and bone remodelling
  Chairs: James Edwards (Oxford, UK) and Michelle Lawson (Sheffield, UK)

  IS3 - Hypoxia signaling, blood vessels and bone, Geert Carmeliet (Leuven, Belgium)

  IS4 - Skeletal angiogenesis, Saravana Ramasamy (London, UK)

16:10 - 16:40 Oral Communications
  Chairs: James Edwards (Oxford, UK) and Michelle Lawson (Sheffield, UK)

  OC6 - The adenosine A2B receptor (ADORA2B) drives osteoclast-mediated bone resorption in hypoxia, Helen Knowles (Oxford, UK)
### PROGRAMME - MONDAY 26 JUNE

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>16:20 - 16:30</td>
<td><strong>OC7</strong> - Osteoclast ruffled border formation: a new perspective,</td>
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<td>Emma McDermott (Aberdeen, UK)</td>
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<td>16:30 - 16:40</td>
<td><strong>OC8</strong> - AdipoR1 deficiency leads to low bone mass and increased bone</td>
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<td>adiposity in vivo,</td>
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<td>Aneka Sowman (Oxford, UK)</td>
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<td>16:40 - 16:50</td>
<td>Comfort break</td>
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<td>16:50 - 17:20</td>
<td><strong>Oral Communications</strong></td>
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<td>Chairs: Duncan Bassett (London, UK) and Mark Edwards (Southampton, UK)</td>
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<td>16:50 - 17:00</td>
<td><strong>OC9</strong> - Sarcopenia is negatively related to osteogenic impacts achieved</td>
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<td>through habitual physical activity: findings from a population-based</td>
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<td>cohort of older females,</td>
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<td>April Hartley (Bristol, UK)</td>
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<td>17:00 - 17:10</td>
<td><strong>OC10</strong> - The longevity-related SirT1 enzyme retards inflamm-ageing in</td>
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<td>James Edwards (Oxford, UK)</td>
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<td>17:10 - 17:20</td>
<td><strong>OC11</strong> - Relationships between markers of inflammation, grip strength</td>
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<td>and bone microarchitecture: findings from the Hertfordshire Cohort</td>
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<td>Study,</td>
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<td>Nicholas Fuggle (Southampton, UK)</td>
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<td>17:20 - 18:20</td>
<td><strong>Debate: Osteoporosis – Nature or nurture?</strong></td>
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<td>Chairs: Duncan Bassett (London, UK) and Miep Helfrich (Aberdeen, UK)</td>
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<td>Nature: Stuart Ralston (Edinburgh, UK)</td>
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<td>Nurture: Cyrus Cooper (Southampton, UK)</td>
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<td>19:15 - 19:30</td>
<td><strong>Buses depart for Conference Dinner</strong> (Bristol Zoo)</td>
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<tr>
<td>19:45</td>
<td><strong>BRS Annual Dinner</strong> (Bristol Zoo)</td>
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Catering breaks and exhibition in the Annexe.
Posters in the Maurice Wilkins and James Watson Rooms.
Talks in Rosalind Franklin Room and Francis Crick Room.

08:45 - 09:45 Symposium 3: Bugs and Bone
   Chairs: Emma Clark (Bristol, UK) and Nick Harvey (Southampton, UK)

08:45 - 09:15 IS5 - The microbiome and bone, Claes Ohlsson (Gothenburg, Sweden)

09:15 - 09:45 IS6 - HIV and bone, Karen Walker Bone (Southampton, UK)

09:45 - 10:15 Oral Communications and Late breaking abstract
   Chairs: Geert Carmeliet (Leuven, Belgium) and Kassim Javaid (Oxford, UK)

09:45 - 09:55 OC12 - HMGBl accelerates regeneration of multiple tissues by transitioning stem cells to G(Alert), Geoffrey Lee (Oxford, UK)

09:55 - 10:05 OC13 - Effect of early bisphosphonate treatment on fracture healing: The fracture and bisphosphonate (FAB) study, Stuart Ralston (Edinburgh, UK)

10:05 - 10:15 LB1 - Characterisation of Angiopoietin-like 4 (ANGPTL4) as a potential new therapeutic target in osteosarcoma, Helen Knowles (Oxford, UK)

10:15 - 10:35 Poster pitching (90 seconds per poster)
   Chairs: Geert Carmeliet (Leuven, Belgium) and Kassim Javaid (Oxford, UK)

10:35 - 11:30 Coffee and poster viewing
   - Poster P21-P30
   - Posters P32-P78 (even numbers only)

P23 - A mammalian transcriptomic atlas reveals genes expressed in bone development are also expressed in the aortic valve, Hiu-Gwen Tsang (Edinburgh, UK)

P24 - A novel role for extracellular signal-regulated kinase (ERK 2) in the control of matricellular protein secretion in osteosarcoma cells, Gudrun Stenbeck (Uxbridge, UK)

P25 - Characterizing the epidemiology of hypophosphatasia in a population in the United Kingdom, Sara Jenkins-Jones (Cardiff, UK)

P26 - Does arterial calcification require aerobic glycolysis? Nabil Rashdan (Edinburgh, UK)

P27 - Bioenergetic characterisation of osteoblastic and chondrocytic cells under basal and stressed conditions through extracellular flux analysis, Brendan Norman (Liverpool, UK)

P28 - Do blood lipid levels influence bone mineral density? Findings from a Mendelian randomization study, Jie Zheng (Bristol, UK)

P29 - Cordycepin reduces established bone changes and pain in two animal models of osteoarthritis, Sadaf Ashraf (Nottingham, UK)

P30 - Mechanical stimuli counteract the deleterious effects of hyperglycemia on the bone quality and fracture healing in diabetic rats, Ariane Zamarioli (Ribeirão Preto, Brazil)
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| 11:30 - 12:30 | **Symposium 4: About time – how do cellular ageing mechanisms affect the musculoskeletal system?**  
|              | Chairs: Tim Arnett (London, UK) and Bronwen Evans (Cardiff, UK)       |
| 11:30 - 12:00 | **IS7 - Cellular senescence and ageing,** Lynne Cox (Oxford, UK)      |
| 12:00 - 12:30 | **IS8 - Running on time: the role of circadian clocks in the musculoskeletal system,**  
|              | Qing-Jun Meng (Manchester, UK)                                        |
| 12:30 - 13:15 | **Lunch**                                                            |
| 13:15 - 13:40 | **Symposium 5: Physical activity and bone**                          
|              | Chairs: Miep Helfrich (Aberdeen, UK) and Jon Tobias (Bristol, UK)     |
| 13:40 - 14:20 | **Charles Dent Lecture**                                             
|              | Chairs: Miep Helfrich (Aberdeen, UK) and Jon Tobias (Bristol, UK)     
|              | Quest for the mechanostat,  
|              | Lance Lanyon (Bristol, UK)                                            |
| 14:20 - 15:00 | **UCB sponsored symposium lecture**                                   
|              | Chair: Stuart Ralston (Edinburgh, UK)                                
|              | Bone modeling vs remodeling in the adult skeleton: Treatment effects and impact on bone strength,  
|              | Roland Baron (Harvard, USA)                                           |
| 15:00 - 15:15 | **Coffee**                                                           |
| 15:15 - 16:15 | **Rosalind Franklin Room**                                           
|              | Symposium 6: The new face of fat – adipocytes as novel mediators in bone biology  
|              | Chairs: Vicky McRae (Edinburgh, UK) and Claes Ohlsson (Gothenburg, Sweden) |
| 15:15 - 15:45 | **IS10 - Role of Wnt signaling in adipocytes,** Fredrik Karpe (Oxford, UK) |
| 15:45 - 16:15 | **IS11 - Adipocytes and bone,** Will Cawthorn (Edinburgh, UK)         |
| 16:15 - 16:30 | **Awards**                                                           |
| 15:15 - 16:30 | **Francis Crick Room**                                               
|              | Clinical update and cases  
|              | Chairs: Ashok Bhalla (Bath, UK) and Sarah Hardcastle (Bristol, UK)      |
| 15:15 - 15:27 | **Fracture liaison service national audit,**  
|              | Kassim Javaid (Oxford, UK)                                            |
| 15:27 - 15:37 | **CC1 - Hungry bone syndrome post-parathyroidectomy,**  
|              | Rachel Cooper (Truro, UK)                                             |
| 15:37 - 15:47 | **CC2 - Hypophosphatasia associated with acute meningo-encephalo-myelitis,**  
|              | Benjamin Jacobs (Stanmore, UK)                                        |
| 15:47 - 15:57 | **London Buses and Osteogenesis Imperfecta,** Shane Clarke (Bristol, UK)  
|              | Mereo Sponsored                                                      |
| 15:57 - 16:07 | **LBCC3 - A profound lack of vitamin D: harnessing the potential of genomics,**  
|              | Kassim Javaid (Oxford, UK)                                            |
| 16:07 - 16:19 | **NOGG Update & NICE Quality Standards,**  
|              | Celia Gregson (Bristol, UK)                                           |
| 16:19 - 16:29 | **LBCC2 - A 3-generation family with autosomal dominant hypophosphatasia,**  
<p>|              | Katie Moss (London, UK)                                               |</p>
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| 18:00 | Rosalind Franklin Room   | Public Engagement Event in association with the National Osteoporosis Society  
‘Physical activity and bone: may the force be with you’  
Exercise and osteoporosis: what patients want to know,  
Sarah Leyland  
(National Osteoporosis Society)  
Relationships between day-to-day physical activity as measured by accelerometers and bone health,  
Jon Tobias (Bristol, UK)  
How regular hopping can make your bones stronger,  
Katherine Brooke-Wavell  
(Loughborough, UK) |
**P1** ARQ-197, a small-molecule inhibitor of c-Met, reduces tumour burden and prevents tumour-associated bone disease in a murine model of myeloma

Darren Lath1,2, Holly Evans1,2, Matthew Fisher1, Jenny Down1,2, Lawson Michelle1,2, Andrew Chantry1,2,3

1Oncology and Metabolism, University of Sheffield, Sheffield, UK, 2Mellanby Centre for Bone Research, University of Sheffield, Sheffield, UK, 3Department of Haematology, Sheffield Teaching Hospitals, NHS Foundation Trust, Sheffield, UK

**P2** Prevalence of low alkaline phosphatase and ALPL mutations in patients with osteoporosis

Beatriz Larraz-Prieto1, Katie Myers1, Ricardo Usategui-Martin2, Stuart H Ralston1, Nerea Alonso1

1Rheumatology and Bone Disease Unit, CGEM-IGMM, University of Edinburgh, Edinburgh, UK, 2Molecular Medicine Unit, Department of Medicine, University of Salamanca, Salamanca, Spain

**P3** Abstract withdrawn

**P4** Susceptibility genes for hip osteoarthritis may influence hip shape

Denis Baird1,2, Jennifer Gregory3, Benjamin Faber1, Richard Aspden1, Claudia Giuraniuc1, Fiona Saunders1, Rebecca Barr1, Jonathan Tobias1

1Musculoskeletal Research Unit, School of Clinical Sciences, University of Bristol, Bristol, UK, 2MRC Integrative Epidemiology Unit, University of Bristol, Bristol, UK, 3Arthritis and Musculoskeletal Medicine, Institute of Medical Sciences, University of Aberdeen, Aberdeen, UK

**P5** SirT1-deficient intervertebral discs display degenerative morphology and decreased size in vivo

Daniel Herrero Charrington, Pradeep Sacitharan, James Edwards

Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, UK

**P6** Relationships between DNA methylation, femoral neck bone mineral density and grip strength from an epigenome wide association study: the Hertfordshire Cohort

Elizabeth Curtis1, Philip Titcombe1, Mark Edwards1,2, Sheila Barton1, Pei-Chien Tsai1, Elaine Dennison1, Jordana Bell1, Tim Specter1, Ana Valdes4, Christopher Bell1,5,6, Nicholas Harvey1,6, Cyrus Cooper1,6,7

1MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK, 2Department of Rheumatology, Portsmouth Hospitals NHS Trust, Portsmouth, UK, 3Department of Twin Research and Genetic Epidemiology, King’s College, London, UK, 4Division of Rheumatology, Orthopaedics, and Dermatology, University of Nottingham, Nottingham, UK, 5Institute of Developmental Sciences, University of Southampton, Southampton, UK, 6NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHSFT, Southampton, UK, 7NIHR Oxford Musculoskeletal Biomedical Research Unit, University of Oxford, Oxford, UK

**P7** Valve interstitial cell (VIC)-derived matrix vesicles (MVs) regulate the pathogenesis of Calcific Aortic Valve Disease (CAVD): a role for Annexin-VI?

Lin Cui1, Nabil Rashdan1, Dongxing Zhu1, Elspeth Milne1, Paul Ajub1, Gillian Milne1, Miep Helfrich1, Kelvin Lim4, Sai Prasad4, Daniel Lerman1, Alex Vesey3, Marc Dweck5, David Newby1, Colin Farquharson1, Vicky Macrae1

1The Roslin Institute and Royal (Dick) School of Veterinary Studies, University of Edinburgh, Edinburgh, UK, 2Gemini Biosciences Ltd, Liverpool, UK, 3Institute of Medical Sciences, University of Aberdeen, Aberdeen, UK, 4Department of Cardiothoracic Surgery, Royal Infirmary Hospital, University of Edinburgh, Edinburgh, UK, 5University/BHF Centre for Cardiovascular Sciences, University of Edinburgh, Edinburgh, UK

**P8** The effect of social deprivation on hip fracture incidence in men and women over 14 years across regions in England

Arti Gauvri Bhirjyani1, Jenny Neuburger2,3, Yoav Ben-Shlomo4, Celia Gregson1

1School of Clinical Sciences, University of Bristol, Bristol, UK, 2Nuffield Trust, London, UK, 3London School of Hygiene and Tropical Medicine, London, UK, 4School of Social and Community Medicine, University of Bristol, Bristol, UK

**P9** Effect of applied mechanical loading on skeletal bone blood flow in mice

Stephanie Gohin1, Behzad Javaheri2, Amy Fisher2, Andrew Pitsillides3, Mark Hopkinson1, Chantal Chenu1

1Comparative Biomedical Sciences, Royal Veterinary College, London, UK, 2Transpharmation Ltd, London, UK
P10  Association between physical activity and scoliosis: A prospective cohort study
Emma Clark, Jon Tobias
Musculoskeletal Research Unit, University of Bristol, Bristol, UK

P11  Vascular calcification and bone formation: are they the same?
Jessal Patel1, Lucie Bourne1, Caroline Wheeler-Jones1, Timothy Arnett2, Vicky MacRae3, Isabel Orriss1
1Comparative Biomedical Sciences, Royal Veterinary College, London, UK, 2Cell and Developmental Biology, University College London, London, UK, 3The Roslin Institute and Royal (Dick) School of Veterinary Studies, University of Edinburgh, Edinburgh, UK

P12  Muscle strength and physical performance from midlife and bone health in early old-age: the MRC National Survey of Health and Development
Kate Ward1, Diana Kuh2, Stella Muthuri2, Adam Moore3, Cyrus Cooper1, Judith Adams9, Rachel Cooper2
1MRC Lifecourse Epidemiology, University of Southampton, Southampton, UK, 2MRC Lifelong Health and Ageing, University College London, London, UK, 3Clinical Radiology, Central Manchester University Hospitals Foundation NHS Trust, Manchester, UK

P13  Deciphering the signalling mechanisms underpinning fibroblast growth factor-2 (FGF-2) mediated osteocytogenesis
Lena Basta1, Dylan Clements1, David Buttle2, Andrew Pitsillides1, Katherine Staines4, Colin Farquharson1, Ekele Ikpegbu1
1Developmental Biology, Roslin Institute and R(D)SVS, The University of Edinburgh, Edinburgh, UK, 2Department of Infection, Immunity and Cardiovascular Disease, The University of Sheffield, Sheffield, UK, 3Comparative Biomedical Sciences, The Royal Veterinary College, London, UK, 4School of Applied Sciences, Edinburgh Napier University, Edinburgh, UK

P14  25-hydroxyvitamin D response to cholecalciferol supplementation in pregnancy is associated with common vitamin D related genetic variants: findings from the MAVIDOS trial
Rebecca Moon1,2, Nicholas Harvey1,3, Cyrus Cooper1,3,4, Stefania D’Angelo1, Elizabeth Curtis1, Sarah Crozier1, Sheila Barton1, Sian Robinson1,3, Keith Godfrey1,3, Nikki Graham1, John Holloway5, Nicholas Bishop6, Stephen Kennedy7, Aris Papageorghiou7, Inez Schoenmakers8,9, Robert Fraser10, Saurabh Gandhi10, Ann Prentice8, Hazel Inskip1,3, M Kassim Javaid4
1MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK, 2Paediatric Endocrinology, University Hospitals Southampton NHS Foundation Trust, Southampton, UK, 3NIHR Southampton Nutrition Biomedical Research Centre, University of Southampton and University of Southampton NHS Foundation Trust, Southampton, UK, 4NIHR Musculoskeletal Biomedical Research Unit, University of Oxford, Oxford, UK, 5Human Development and Health, Faculty of Medicine, University of Southampton, Southampton, UK, 6Academic Unit of Child Health, Sheffield Childrens Hospital, University of Sheffield, Sheffield, UK, 7Nuffield Department of Obstetrics and Gynaecology, John Radcliffe Hospital, University of Oxford, Oxford, UK, 8MRC Elsie Widdowson Laboratory, Cambridge, UK, 9Department of Medicine, Faculty of Medicine and Health Sciences, University of East Anglia, Norwich, UK, 10Obstetrics and Gynaecology, Sheffield Hospitals NHS Trust (University of Sheffield), Sheffield, UK

P15  Evidence for gender-specific vascular signalling in bone
Alice Goring1, Juan A Núñez1,2, Napoleone Ferrara3, Bjorn R Olsen4, Richard OC Oreffo5, Philipp Schneider2, Claire E Clarkin1
1Centre for Biological Sciences, University of Southampton, Southampton, UK, 2Faculty of Engineering and the Environment, University of Southampton, Southampton, UK, 3San Diego Medical Center, University of California, San Diego, United States of America, 4Department of Developmental Biology, Harvard School of Dental Medicine, Boston, United States of America, 5Institute of Developmental Sciences, University of Southampton, Southampton, UK

P16  Multiple myeloma regulates bone marrow adipocyte number, localisation and adipokine secretion
Emma V Morris1, Seint Lwin1,2, Joseph Hocking2, Siobhan Webb1, Claire M Edwards1,2
1Nuffield Department of Surgical Sciences, University of Oxford, Oxford, UK, 2Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, UK
POSTERS

P17 Use of hip DXA scans to identify shape changes associated with hip osteoarthritis
Benjamin G Faber1, Denis Baird1, Celia L Gregson1, Jenny S Gregory2, Rebecca J Barr2, Richard M Aspden3, John Lynch1, Michael C Nevitt3, Nancy E Lane4, Eric Orwoll5, Jon H Tobias1
1Musculoskeletal Research Unit, University of Bristol, Bristol, UK, 2Arthritis and Musculoskeletal Medicine, University of Aberdeen, Aberdeen, UK, 3Department of Epidemiology and Biostatistics, University of California, San Francisco, USA, 4Department of Medicine, University of California Davis, Sacramento, USA, 5Division of Endocrinology, Oregon Health and Sciences University, Portland, USA

P18 18F-FDG PET/CT imaging following insulin treatment and short term cold exposure in mice
Karla Suchacki, Adriana Tavares, Carlos Alcaide Corral, Nicholas Morton, William Cawthorn
Queen's Medical Research Institute, The University of Edinburgh, Edinburgh, UK

P19 Bone health in boys with Duchenne muscular dystrophy: The dichotomy between bone density and fracture
Nicola Crabtree1, Wolfgang Hogler1,2, Helen Roper3, Nicholas Shaw1,2
1Endocrinology, Birmingham Women's and Children's NHS Foundation Trust, Birmingham, UK, 2Institute of Metabolism and Systems Research, University of Birmingham, Birmingham, UK, 3Paediatrics, Heart of England NHS Foundation Trust, Birmingham, UK

P20 Bisphosphonates regulate autophagy in vitro and in vivo
Jack Beard1, Emma Morris1, Michelle Lawson2, Graham Russel1,2, James Dunford1, James Edwards1
1Nuffield Department for Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, UK, 2Department of Oncology and Metabolism, University of Sheffield, Sheffield, UK

P21 Extracellular vesicles-derived from mineralising osteoblasts induce stem cell osteogenesis: a new phase in regenerative medicine?
Owen Davies1,2, Sophie Cox2, Richard Williams2, Mark Lewis1, Liam Grover2
1School of Sport, Exercise and Health Sciences, Loughborough University, Loughborough, UK, 2School of Chemical Engineering, University of Birmingham, Birmingham, UK

P22 T Score correlation with micro CT measurements of the femoral head in hip fracture
Linda Skingle1, Karen Blesic1, Polly Barnes1, Ken Poole2
1Department of Medicine, Cambridge NIHR Biomedical Research Centre, Cambridge, UK, 2Department of Medicine, University of Cambridge, Cambridge, UK

P23 A mammalian transcriptomic atlas reveals genes expressed in bone development are also expressed in the aortic valve
Hiu-Gwen Tsang1, Emily L Clark1, Stephen J Bush1, David A Hume1, Brendan M Corcoran2, Vicky E MacRae1, Kim M Summers1
1The Roslin Institute, The University of Edinburgh, Edinburgh, UK, 2Hospital for Small Animals, The University of Edinburgh, Edinburgh, UK

P24 A novel role for extracellular signal-regulated kinase (ERK 2) in the control of matricellular protein secretion in osteosarcoma cells
Amir Jassim, Gudrun Stenbeck
Biosciences, Brunel University, Uxbridge, UK

P25 Characterizing the epidemiology of hypophosphatasia in a population in the United Kingdom
Sara Jenkins-Jones1, Craig Currie1,2, Ioannis C Tomazos1, Bonnie MK Donato3, Nick Bishop4, Richard Eastell1
1Global Epidemiology and Medical Statistics, Pharmatelligence, Cardiff, UK, 2Cochrane Institute of Primary Care and Public Health, Cardiff University, Cardiff, UK, 3Global Payer Evidence & Value Translation, Alexion Pharmaceuticals, Inc, New Haven, USA, 4Mellanby Centre for Bone Research, University of Sheffield, Sheffield, UK

P26 Does arterial calcification require aerobic glycolysis?
Nabil Rashdan, Vicky MacRae
Developmental Biology, The Roslin Institute and Royal (Dick) School of Veterinary Studies, Edinburgh, UK

P27 Bioenergetic characterisation of osteoblastic and chondrocytic cells under basal and stressed conditions through extracellular flux analysis
Brendan Norman, Peter Wilson, Mohd Osman, Norman Roberts, Lakshminarayan Ranganath, James Gallagher
Musculoskeletal Biology I, Institute of Ageing & Chronic Disease, University of Liverpool, Liverpool, UK

P28 Do blood lipid levels influence bone mineral density? Findings from a Mendelian randomization study
Jie Zheng1, Marie-Jo Brion1, John Kemp1, Nicole Warrington1, Gibran Hemeni1, Zhen Qiao2, Philip Haycock1, Jonathan Tobias1,3, David Evans1,2
1MRC Integrative Epidemiology Unit, University of Bristol, Bristol, UK, 2Diamantina Institute, Queensland University, Brisbane, Australia, 3Musculoskeletal Research Unit, University of Bristol, Bristol, UK
P29 Cordycepin reduces established bone changes and pain in two animal models of osteoarthritis
Sadaf Ashraf1,2, Peter Gowler1, James Burston1, Victoria Chapman3, Cornelia de Moor1,2
1Pharmacy, University of Nottingham, Nottingham, UK, 2Arthritis Research UK Pain Centre, University of Nottingham, Nottingham, UK

P30 Mechanical stimuli counteract the deleterious effects of hyperglycemia on the bone quality and fracture healing in diabetic rats
Ariane Zamarioli1, Maysa S Campos1, João P B Ximenes2, José B Volpon1
1Biomechanics, Medicine and Rehabilitation, University of São Paulo, Ribeirão Preto, Brazil, 2School of Pharmaceutical Sciences of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil.

P31 High magnitude vertical impacts are positively related to hip strength in master athletes
Ahmed Elhakeem1, Jessica Coulson2, Kimberly Hannami1, Kevin Deere1, Alex Ireland3, Mathew Piascik1, April Hartley1, Usama Al-Sari1, William Fraser3, Jamie McPhee2, Jon H Tobias1
1Musculoskeletal Research Unit, School of Clinical Sciences, University of Bristol, Bristol, UK, 2School of Healthcare Science, Manchester Metropolitan University, Manchester, UK, 3Norwich Medical School, University of East Anglia, Norwich, UK.

P32 The ontogeny of human vertebral bone microstructure: implications for mechanical performance
Nic Roberts1, Richard Trask2, Richard Abel3, Kate Robson Brown4,5
1Advanced Composites Centre for Innovation and Science, University of Bristol, Bristol, UK, 2Department of Mechanical Engineering, University of Bath, Bath, UK, 3Faculty of Medicine, Imperial College, London, UK, 4CT Imaging Laboratory, University of Bristol, Bristol, UK, 5Department of Mechanical Engineering, University of Bristol, Bristol, UK.

P33 ETS2 Repressor Factor (ERF) – associated craniosynostosis: molecular mechanisms and therapeutic approaches
Angeliki Vogiatzi2, Konstantinos Makris2,3, George Mavrothalassitis1,2
1Faculty of Medicine, University of Crete, Heraklion, Greece, 2Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology– Hellas, Heraklion, Greece, 3Department of Biology, University of Crete, Heraklion, Greece.

P34 Generation of the HGD mouse model of alkaptonuria
Juliette Hughes1, Ke Liu1, Antonius Plagge2, Andrew Hughes3, Anna Milan3, Lakshminarayan Ranganath3, James Gallagher1, George Bou-Gharios1
1Musculoskeletal Biology I, Institute of Ageing and Chronic Disease, University of Liverpool, Liverpool, UK, 2Institute of Translational Medicine, University of Liverpool, Liverpool, UK, 3Liverpool Clinical Laboratories, Royal Liverpool and Broadgreen University Hospital Trust, Liverpool, UK

P35 Evaluation of the Utah algorithm for identifying hypophosphatasia to estimate prevalence in the United Kingdom
Sara Jenkins-Jones1, Craig Currie1,2, Ioannis C Tomazos1, Bonnie MK Donato3, Richard Eastell4
1Global Epidemiology and Medical Statistics, Pharmatelligence, Cardiff, UK, 2Cochrane Institute of Primary Care and Public Health, Cardiff University, Cardiff, UK, 3Global Payer Evidence & Value Translation, Alexion Pharmaceuticals, Inc, New Haven, USA, 4Mellanby Centre for Bone Research, University of Sheffield, Sheffield, UK.

P36 Abstract withdrawn

P37 Abstract withdrawn

P38 Bone marrow adipose tissue: a novel regulator of metabolic and skeletal health?
William Cawthorn
University/BHF Centre for Cardiovascular Science, The University of Edinburgh, Edinburgh, UK.

P39 Hepcidin modulates runx2a gene expression to regulate biomineralization of bone in zebrafish
Yu Jiang, Youjia Xu
Department of Orthopedics, The Second Affiliated Hospital of Soochow University, Suzhou, China.

P40 Abstract withdrawn

P41 Everyday physical activities in older people with compression vertebral fractures (VF): a systematic review and meta-analysis
Usama A Al-Sari, J Tobias, Emma M Clark
Musculoskeletal Research Unit, University of Bristol, Bristol, UK.
POSTERS

P42 Prevalence of obesity, osteopenia and osteoporosis in adults with cerebral palsy
Daniel Whitney1, Edward Hurvitz2, Maureen Devlin3, Michelle Caird4, Mark Peterson2
1Department of Kinesiology and Applied Physiology, University of Delaware, Newark, USA, 2Department of Physical Medicine and Rehabilitation, University of Michigan, Ann Arbor, USA, 3Department of Anthropology, University of Michigan, Ann Arbor, USA, 4Department of Orthopaedic Surgery, University of Michigan, Ann Arbor, USA

P43 A method to analyse the development of osteolytic lesions in mice using in vivo micro-computed tomography (CT) and rigid image registration
Holly Evans12, Simon Tazzyman12, Julia Paton-Hough12, Paul Metherall13, Andrew Chantry12, Michelle Lawson12
1Oncology & Metabolism, University of Sheffield, Sheffield, UK, 2Mellanby Centre for Bone Research, University of Sheffield, Sheffield, UK, 3Medical Images and Medical Physics, Sheffield Teaching Hospitals, Sheffield, UK

P44 Abstract withdrawn

P45 Osteitis condensans illii: Differential diagnosis and management
Peter Peev, Francesca Mellor
Trauma & Orthopaedics, London North West Healthcare NHS Trust, London, UK

P46 The musculoskeletal benefits of gait speed maintenance in older men and women
Mark Edwards12, Kate Ward13, Karen Jameson1, Elaine Dennison1, Cyrus Cooper14,5
1MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK, 2Rheumatology, Portsmouth Hospitals NHS Trust, Portsmouth, UK, 3MRC Human Nutrition Research, Elsie Widdowson Laboratory, Cambridge, UK, 4NIHR Musculoskeletal Biomedical Research Unit, University of Oxford, Oxford, UK, 5NIHR Nutrition Biomedical Research Centre, University of Southampton, Southampton, UK

P47 A novel method for identifying radiographic baseline risk of osteoarthritis using an anisotropy-based texture analysis algorithm: data from the Osteoarthritis Initiative
Richard Ljuhar1, Tobias Haftner2, Benjamin Norman1, Davul Ljuhar4, Astrid Fahrlie-Pammer4, Hans-Peter Dimai4, Stefan Nehrer3
1Research & Development, ImageBiopsy Lab, Vienna, Austria, 2Research & Development, Braincon Technologies, Vienna, Austria, 3Department for Health Sciences and Biomedicine, Danube University Krems, Krems, Austria, 4Division of Endocrinology and Diabetology, Medical University Graz, Graz, Austria

P48 Horrendous pain surely not osteoarthritis (HPOA)
Annabel Suarez, Tommy Lwin, Ben Faber, Edward Harris, Andrew Stanton
Respiratory Medicine, Great Western Hospitals NHS Foundation Trust, Swindon, UK

P49 Circulating levels of bone regulatory factors Dickkopf-1, Osteocalcin, Osteoprotegerin and Sclerostin are associated with whole-body bone mineral density in older men and women
Jessica Coulson1, Bagley Lijam1, Barnouin Yoann12, Bradburn Steven1, Gillian Butler-Brown1, Helena Gapeyeva4, Jean-Yves Hogrel1, Thomas Maden-Wilkinson1, Andrea Maier6,7, Carel Meskers12, Chris Murgatroyd1, Marco Narici6,7, Mati Paasuke1, Lorra ine Sassant11, Sarianna Sipila11, Lauri Stenroth11, Jamie S McPhee1
1School of Healthcare Science, Manchester Metropolitan University, Manchester, UK, 2Baylor College of Medicine, Baylor College of Medicine, Houston, Texas, USA, 3Institut de Myologie, GH Pité-Salpêtrière, Paris, France, 4Institute of Sport Sciences and Physiotherapy, University of Tartu, Tartu, Estonia, 5School of Sport and Exercise and Health, University of Loughborough, Loughborough, UK, 6MOVE Research Institute, Vrije University, Amsterdam, Netherlands, 7The Royal Melbourne Hospital, University of Melbourne, Melbourne, Australia, 8Rehabilitation Medicine, VU University Medical Center, Amsterdam, Netherlands, 9Graduate Entry Medicine and Health, University of Nottingham, Nottingham, UK, 10Department of Health Sciences, University of Jyväskylä, Jyväskylä, Finland, 11Gerontology Research Center, Department of Health Sciences, University of Jyväskylä, Finland

P50 The effect of age and puberty on proximal femur shape
Monika Frysz12, Jenny Gregory3, Denis Baird24, Richard Aspden4, Lavinia Paternoster12, Jonathan Tobias3
1School of Social and Community Medicine, University of Bristol, UK, 2MRC Integrative Epidemiology Unit at the University of Bristol, UK, 3Arthritis and Musculoskeletal Medicine, Institute of Medical Sciences, University of Aberdeen, UK, 4Musculoskeletal Research Unit, School of Clinical Sciences, University of Bristol, UK

P51 Investigation of relationships between hip bone mineral density and hip shape in adolescent and adult females
Monika Frysz12, Jenny Gregory3, Denis Baird24, Richard Aspden4, Lavinia Paternoster12, Jonathan Tobias3
1School of Social and Community Medicine, University of Bristol, UK, 2MRC Integrative Epidemiology Unit at the University of Bristol, UK, 3Arthritis and Musculoskeletal Medicine, Institute of Medical Sciences, University of Aberdeen, UK, 4Musculoskeletal Research Unit, School of Clinical Sciences, University of Bristol, UK
P52  Differential effects of aging on fracture resistance between female and male BALB/c mice
Jeffry Nyman1,2, Sasidhar Uppuganti1, Amy Creecy2, Madeline Girard1, Siegried Schlunk2
1Orthopaedic Surgery and Rehabilitation, Vanderbilt University Medical Center, Nashville, USA, 2Biomedical Engineering, Vanderbilt University, Nashville, USA

P53  Model of Support for Fracture Liaison Service Development
Will Carr, Sonya Stephenson
Service Development, National Osteoporosis Society, Bath, UK

P54  Prostaglandin (PG) E2 and I2 synthases in resident bone cells
Simon Rawlinson1, Yujun Liu2
1Institute of Dentistry, Queen Mary University London, London, UK, 2School of Biological and Chemical Sciences, QMUL, London, UK

P55  Characteristics of a population of postmenopausal women on a long-term bisphosphonate holiday
Diane Powell, Sally Evans, Mark Garton
Charles Salt Centre for Human Metabolism, Robert Jones & Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry, UK

P56  The roles of AKT and NHERF-1 in osteoarthritis
Thomas Griffin-Walker, Katherine McKenna, David Samy, Mairi Blair, Su Yin Yong, Rachel White, Richard Aspden, Fiona Saunders
Arthritis & Musculoskeletal Medicine, University of Aberdeen, Aberdeen, UK

P57  Vertebral Fractures in children with chronic inflammatory and/or disabling conditions: the SNAP study
Nicola Crabtree1, Wolfgang Hogler1,2, Dee Chapman1, Jacky Walford1, Nicholas Shaw1,2
1Endocrinology, Birmingham Women’s and Children’s Hospital, Birmingham, UK, 2Institute of Metabolism and Systems Research, University of Birmingham, UK

P58  Body mass index across adulthood and spine shape in early old age in a UK birth cohort
Anastasia Pavlova1, Stella Muthuri1, Fiona Saunders1, Kathryn Martin1, Jenny Gregory1, Rebecca Barr1, Judith Adams1, Diana Kuh2, Rachel Cooper2, Rebecca Hardy1, Richa rd Aspden1
1Arthritis & Musculoskeletal Medicine, University of Aberdeen, Aberdeen, UK, 2MRC Unit for Lifelong Health & Ageing, UCL, London, UK, 3Medicines Monitoring Unit, Division of Molecular & Clinical Medicine, School of Medicine, University of Dundee, Dundee, UK, 4Central Manchester University Hospitals NHS Foundation Trust, Manchester Academic Health Science Centre and Radiology, Manchester, UK

P59  Cytokine and Hormonal Regulation of Bone Marrow Immune Cell Wnt10b Expression
Fraser Collins1, Naiomy Deliz Rios-Arce1, Laura McCabe1,2,3, Narayanan Parameswaran1
1Physiology, Michigan State University, East Lansing, USA, 2Radiology, Michigan State University, East Lansing, USA, 3Biomedical Imaging Research Center, Michigan State University, East Lansing, USA

P60  Drinking green tea alleviates alveolar bone resorption in ligature-induced periodontitis in mice
Boosana Kaboosaya1, Trang Nguyen-Vo Ngoc1, Wulansari Lia Kartika1, Jia Haol, Kazuhiro Aoki1, Shohei Kasugai1
1Oral Implantology and Regenerative Dental Medicine, Tokyo Medical and Dental University, Tokyo, Japan, 2Department of Bio-Matrix (Pharmacology), Tokyo Medical and Dental University, Tokyo, Japan

P61  Longitudinal differences in bone development in adolescent male athletes: The PRO-BONE study
Dimitris Vlachopoulos1, Alan R Barker, Craig A Williams1, Esther Ubago-Guisado2, Francisco B Ortega1, Jonathan R Ruiz1, Ioannis G Fatouros1, Alexandra Avloniti1, Luis A Moreno1, Luis Gracia-Marco1,6
1Sport and Health Sciences, University of Exeter, Exeter, UK, 2Sport and Health Sciences, University of Castilla-La Mancha, Toledo, Spain, 3Department of Physical Education and Sport Sciences, University of Granada, Granada, Spain, 4Department of Physical Education and Sport Sciences, University of Thessaly, Trikala, Greece, 5Department of Physical Education and Sport Sciences, Democritus University of Thrace, Komotini, Greece, 6Growth, Exercise, Nutrition and Development Research Group, University of Zaragoza, Zaragoza, Spain

P62  Abstract withdrawn

P63  A case of osteonecrosis of the jaw in paget’s disease of bone
Stephen Tuck
Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK

P64  Satoyoshi syndrome: an unusual cause of osteomalacia
Julie Walker1, Stephen Tuck2
1Histopathology, James Cook University Hospital, Middlesbrough, UK, 2Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK
POSTERS

P65 Gut microbiota and bone metabolism
Claes Olhsson, Klara Sjögren
Center for Bone and Arthritis Research, Institute of Medicine, Gothenburg University, Gothenburg, Sweden

P66 Running on time: the role of the circadian clocks in the musculoskeletal system
Qing-Jun Meng
Faculty of Biology, Medicine and Health, University of Manchester, Manchester, UK

P67 Fracture toughness of cancellous bone as a function of BV/TV and its microarchitecture
George Adams1, Richard Cook2, Peter Zioupos3
1Cranfield Forensic Institute, Cranfield University, Shrivenham, UK, 2nCATS, School of Engineering Science, University of Southampton, Southampton, UK

P68 Abstract withdrawn

P69 The relationship between circulating adiponectin and leptin with bone mineral density (BMD), arterial calcification and stiffness: a cross-sectional study in post-menopausal women
Nisha Tanna1, Arun Sankaralingam1, Amelia Moore2, Dwight Dulnoan3, Sylvie Eawards2, Geeta Hampson1
1Clinical Chemistry, Guy’s and St Thomas’ NHS trust, London, UK, 2Osteoporosis Unit, Kings College London, London, UK, 3Rheumatology, Guy’s and St Thomas’ NHS trust, London, UK

P70 Missed opportunities: What the FRAX?
Azrin Muslim, Nur Atikah Mohd Asri, Elís McCarthy, Pamela Hickey, Jude Ryan
Geriatrics and Therapeutics, University Hospital Limerick, Limerick, Ireland

P71 Principal component-derived bone density phenotypes and genetic regulation of the pediatric skeleton
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P72 Modelling Stickler syndrome in zebrafish
Lizzie Lawrence, Karen Roddy, Erika Kague, Lucy Brun, Chrissy Hammond
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P73 Marine organism-derived extracts for bone growth: the discovery of novel osteogenic compounds
Matthew Carson1, John Nelson2, Brendan Gilmore3, Margaret Rae4, Paulo Gavaia3, Vincent Laizé5, Leonor Cancela6, Susan Clarke7
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P74 Ionic mechanisms in adipogenic differentiation of osteoblastic cells treated with ghrelin
Marine Bastien, James E Downing, Andrew R Evans, Neil C Henney
School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Liverpool, UK

P75 Modelling osteoarthritis and other adult skeletal conditions in zebrafish
Erika Kague1, Karen Roddy1, Lizzie Lawrence1, Kate Robson Brown2, Chrissy Hammond3
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P76 Incubation at physiological temperature promotes ovine osteoblast proliferation and activity
Ines P Perpetuo, Michael Doube, Isabel R Orriss
Comparative Biomedical Sciences, Royal Veterinary College, London, UK

P77 Brittle bone phenotype of TallyHO mice does not worsen with duration of type 2 diabetes
Amy Creecy1, Sasidhar Uppuganti1,2,3, Chiedza Chauruka1, Jeffry Nyman1,2,3
1Biomedical Engineering, Vanderbilt University, Nashville, USA, 2Orthopaedic Surgery and Rehabilitation, Vanderbilt University Medical Center, Nashville, USA, 3Veteran Affairs, Tennessee Valley Healthcare System, Nashville, USA
POSTERS

P78 Systemic administration of rosiglitazone stimulates apoptosis of osteocytes, interfering in the development of induced periapical lesions in mice

Katharina Oliveira¹, Paulo Nelson-Filho², Andiara De-Rossi², Lea Silva², Alexandra Queiroz², Driely Barreiros³, Gustavo Garlet¹, Raquel Silva²

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P79 The entheses of the rotator cuff, bone mineral density (osteoporosis) and occupations

Charlotte Henderson, Francisco Curate
CIAS - Research Centre for Anthropology and Health, Department Life Sciences, University of Coimbra, Coimbra, Portugal

LATE BREAKING POSTERS

LBP4 Skeletal defects emerge surprisingly early in murine models of secondary dystroglycanopathy

Mark Hopkinson, Behzad Javaheri, Susan Brown, Andrew Pitsillides
Comparative Biomedical Sciences, Royal Veterinary College, London, UK

LBP5 Sex-dependent associations between objectively-assessed physical activity and bone mineral density in community-dwelling older adults

Lachlan McMillan¹, Dawn Aitken³, Peter Ebeling¹, Graeme Jones³, David Scott¹²³
¹School of Clinical Sciences at Monash Health, Monash University, Melbourne, Australia, ²Melbourne Medical School (Western Campus), The University of Melbourne, Melbourne, Australia, ³Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia

LBP6 Repurposing glutamate receptor antagonists for the prevention of post-traumatic osteoarthritis

Cleo Bonnet, Sophie Gilbert, Deborah Mason
Arthritis Research UK Biomechanics and Bioengineering Centre, Cardiff University, Cardiff, UK

LBP7 Investigation of 3D femoral bone mineral density in women with hip fracture, frailty-matched women without hip fracture, and their daughters

Monika Kondratowicz¹, Polly Barnes², Daniel Chappell³, Karen Blesic⁴, Kenneth Poole⁵
¹School of Clinical Medicine, Cambridge University, Cambridge, UK, ²Department of Medicine, Cambridge University, Cambridge, UK

LBP8 Temporal gene expression patterns between developing embryonic mouse lower limb bones and calvaria indicate co-operation of mineralisation-associated proteins and phosphatases during skeletal biomineralisation

Scott Dillon¹, Fabio Nudelman⁶, Colin Farquharson³
¹The Roslin Institute, University of Edinburgh, Edinburgh, UK, ²School of Chemistry, University of Edinburgh, Edinburgh, UK

LBP9 Abstract withdrawn

LBP10 Abstract withdrawn

LBP11 New method for quantitative polarised light microscopy of laser-ablation machined sections of bones and joints

Alan Boyd
Dental Physical Sciences, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK
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We launched our first Bone Health product in 2014 having identified an unmet need for prescribers and patients to have access to licenced medicines within the vitamin D therapeutic area.

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Founded in 2010, Internis is a UK specialty pharmaceutical company engaged in the development and commercialisation of highly effective and innovative new medicines aimed at the treatment and prevention of a range of common bone disorders, such as osteoporosis and vitamin D3 deficiency.

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MEREO
Mereo is a UK-based specialty biopharma company established to acquire and develop innovative products that may not have otherwise been developed within large pharma or big biotech. These companies have become under increasing pressure to streamline R&D therefore creating opportunities for Mereo.
Mereo’s aim is to become a leading biopharma company focussed on speciality and rare diseases with significant unmet needs.
Mereo’s initial portfolio is in respiratory, endocrinology and metabolic bone disease. Each of which has proof of efficacy data and address large unmet needs in either speciality or rare disease.
The company has advanced the respiratory and endocrinology products into Phase 2 and Phase 2b with data expected towards the end of the year and BPS 804 for Osteogenesis Imperfecta is about to start its Phase 2b study in adults. There is also an active search for new products.

UCB
UCB, Brussels, Belgium (www.ucb.com) is a global biopharmaceutical company focused on the discovery and development of innovative medicines and solutions to transform the lives of people living with severe diseases of the immune system or of the central nervous system. With more than 7,700 people in approximately 40 countries, the company generated revenue of € 4.2 billion in 2016. UCB is listed on Euronext Brussels (symbol: UCB). Follow us on Twitter: @UCB_news.
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At the National Osteoporosis Society, we understand that fractures can have shocking effects on day-to-day life. We are committed to helping people with osteoporosis live the lives they want to lead and we work every day to prevent future fractures. As the only UK-wide charity dedicated to ending the pain and suffering caused by osteoporosis we are here for anyone affected by the condition, providing help and support for people with osteoporosis now.

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Hologic invented DXA and have continued to develop it into a multi-faceted imaging tool providing the widest range of accessible applications, culminating in the new Horizon system. The range is very wide: Body Mass Index, Visceral Adipose Tissue studies, android/gynoid ratio, cardiac calcification scoring, Body Composition Analysis, single energy femur scan for evaluation of a typical femur fracture assessment and high definition mode for vertebral fracture assessment.
The concept that drives the Horizon is that it must be future proof with capabilities to meet evolving applications. Horizon is backed up by Vertec’s customer focus which includes skilled applications specialists and service engineers to make sure you get the best from what we supply.
This annual 3-day residential training course provides trainees in medical specialties such as rheumatology, endocrinology, care of the elderly, gastroenterology, orthopaedics, respiratory medicine and clinical chemistry with the knowledge and understanding to manage patients with osteoporosis and other metabolic bone diseases. The course focuses on practical issues relating to patient management and is strongly recommended for any trainee who foresees that patients with these disorders will form a significant part of their workload in future. Specialist nurses in osteoporosis and falls will also find this course valuable, as well as newly qualified consultants or others wishing to update their knowledge.
The Bone Research Society is extremely grateful to the following organisations who have supported the meeting: